

It was 27th April 2018 when the results of CSE 2017 were declared and I had secured AIR-402. While it was satisfactory for my first Mains, it was not until the second week of May that I realised while personality test single-handedly got me into the list, essay paper single-handedly kept me from becoming an IAS. When the highest marks secured were above 170, average score for a selected candidate was above 135, I had secured only 105 marks. Every once in a while history repeats itself and it sure did for me too. On 5th April 2019, when results of CSE 2018 were declared, while I had secured AIR 248, a known Achilles heel of mine became my undoing. I got 79 marks in the essay paper. Single-handedly it had kept me from securing a rank in top 20. In an exam where fresher candidates score 130 without any special preparation, why was I not able to get even an average score??? What am I doing wrong? The answer lay not in the content but something else entirely!

Here based upon my experiences I will elaborate on how to write a good essay for UPSC CSE. I will elaborate on:

- What the essay paper is about?
- How to strategise our preparation?
- How do we go about attempting the essay paper?
- Some useful tips for the essay.

That's why I think before we strategize to attempt the essay paper let's understand what the essay paper is about. Also, what it isn't about.

1. It's not about your knowledge – that gets tested in GS papers, also many candidates performing average to below average in GS papers have done consistently outstandingly in essay paper.
2. It's not about your linguistic skills – that how flowery language you can write ... or how good your vocabulary is.
3. It's not about your literary skills – how many quotations/poems can you write about a subject or can you compose couplets about the subject.
4. It's definitely not about your handwriting (legible handwriting written neatly is enough).

M.H. Abrams, the American literary critic, notes that the essay is "Any short composition in prose that undertakes to discuss a matter, express a point of view, or persuade us to accept a thesis on any subject."

1. How accurately we understand an issue – from historical (why) to present (what) to future (how) aspects of it.
2. Ability to think holistically covering various perspectives of an issue like social, economic, political, cultural, technical, environmental, international, ethic, sports, etc.
3. Ability to break the issue down to few thematic and pertinent questions – who (stakeholders), when, what, where, why, how.
4. Ability to provide creative solutions to the problem at hand.
5. Ability to document your thoughts into a coherent and concise text.
6. Orientation as to whether you are broadly an optimistic or a pessimistic person.

During the course of our preparation it is better to have overall knowledge about a vast number of things, thus it's not very difficult for an average candidate to summon knowledge. However, in my three Mains and two debacles in the essay paper I have come to know that it's not the lack of knowledge but improper selection of content from our knowledge base, lack of proper organisation and incoherent presentation that holds us back.

All in all it can be thought of as a written form of personality test - as it judges your entire thought and execution process as well as the practicality of the same.

Having seen what the essay paper is about and what it's not, we should proceed to preparing for the essay paper.

## STRATEGISING THE PREPARATION

The strategy to prepare for the essay paper begins with understanding the kinds of questions one can expect to face in the essay paper. Once we know the types of questions we can face, we can start preparing accordingly. The essay types can broadly be sub-categorised into the following heads shown with examples from previous year questions (PYQs)-

Essay Type	Essay Topic
Social Issues	<ul style="list-style-type: none"> <li>• The Indian society at the crossroads. (1994)</li> <li>• The new emerging women power: the ground realities. (1995)</li> <li>• New cults and godmen: a threat to traditional religion. (1996)</li> <li>• Greater political power alone will not improve women's plight. (1997)</li> <li>• The composite culture of India. (1998)</li> <li>• Woman is God's best creation. (1998)</li> <li>• Youth culture today. (1999)</li> </ul>

- Women empowerment: challenges and prospects. (1999)
- Modernism and our traditional socio-ethical values. (2000)
- Indian culture today: a myth or a reality? (2000)
- Empowerment alone cannot help our women. (2001)
- As civilization advances culture declines. (2003)
- Whither women's emancipation? (2004)
- If women ruled the world. (2005)
- The hand that rocks the cradle. (2005)
- Women's reservation bill would usher in empowerment for women in India. (2006)
- From traditional Indian philanthropy to the Gates-Buffet model – a natural progression or a paradigm shift? (2010)
- Managing work and home – is the Indian working woman getting a fair deal? (2012)
- If development is not engendered, it is endangered. (2016)
- Fulfillment of 'new woman' in India is a myth. (2017)
- South Asian societies are woven not around the state, but around their plural cultures and plural identities. (2019)
- Best for an individual is not necessarily best for the society. (2019)
- Neglect of primary health care and education in India are reasons for its backwardness - A socio-economic topic. (2019)
- There can be no social justice without economic prosperity but economic prosperity without social justice is meaningless - A socio-economic topic. (2020)
- Patriarchy is the least noticed yet the most significant structure of social inequality. (2020)

Economic Issues	<ul style="list-style-type: none"> <li>• Multinational corporations – saviours or saboteurs. (1994)</li> <li>• Resource management in the Indian context. (1999)</li> <li>• Globalization would finish small-scale industries in India. (2006)</li> <li>• BPO boom in India. (2007)</li> <li>• Special Economic Zone: boon or bane? (2008)</li> <li>• Are our traditional handicrafts doomed to a slow death? (2009)</li> <li>• Is the criticism that the Public-Private-Partnership (PPP) model for development is more of a bane than a boon in the Indian context, justified? (2012)</li> <li>• GDP (Gross Domestic Product) along with GDH (Gross Domestic Happiness) would be the right indices for judging the well-being of a country. (2013)</li> <li>• Was it the policy paralysis or the paralysis of implementation which slowed the growth of our country? (2014)</li> </ul>
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	<ul style="list-style-type: none"> <li>• Tourism: Can this be the next big thing for India? (2014)</li> <li>• Can Capitalism bring inclusive growth? (2015)</li> <li>• Crisis faced in India – moral or economic. (2015)</li> <li>• Near jobless growth in India: An anomaly or an outcome of economic reforms. (2016)</li> <li>• Digital economy: A leveller or a source of economic inequality. (2016)</li> <li>• Innovation is the key determinant of economic growth and social welfare. (2016)</li> <li>• Farming has lost the ability to be a source of subsistence for majority of farmers in India.</li> <li>• Impact of the new economic measures on fiscal ties between the Union and States in India. (2017)</li> <li>• Poverty anywhere is a threat to prosperity everywhere. (2018)</li> </ul>
Polity, Governance and Administration	<ul style="list-style-type: none"> <li>• Politics, bureaucracy and business – fatal triangle. (1994)</li> <li>• Whither Indian democracy? (1995)</li> <li>• Politics without ethics is a disaster. (1995)</li> <li>• The VIP cult is a bane of Indian democracy. (1996)</li> <li>• Need for transparency in public administration. (1996)</li> <li>• What we have not learnt during fifty years of independence. (1997)</li> <li>• The language problem in India: its past, present and prospects. (1998)</li> <li>• Why should we be proud of being Indians? (2000)</li> <li>• What have we gained from our democratic set-up? (2001)</li> <li>• How should a civil servant conduct himself? (2003)</li> <li>• How far has democracy in India delivered the goods? (2003)</li> <li>• Water resources should be under the control of the central government. (2004)</li> <li>• Evaluation of Panchayati Raj System in India from the point of view of eradication of power to people. (2007)</li> <li>• Is autonomy the best answer to combat balkanization? (2007)</li> <li>• National identity and patriotism. (2008)</li> <li>• Creation of smaller states and the consequent administrative, economic and developmental implication. (2011)</li> <li>• In the context of Gandhiji's views on the matter, explore, on an evolutionary scale, the terms 'Swadhinata', 'Swaraj' and 'Dharmrajya'. Critically comment on their contemporary relevance to Indian democracy. (2012)</li> <li>• Is the colonial mentality hindering India's success? (2013)</li> <li>• Is sting operation an invasion on privacy? (2014)</li> <li>• Cooperative federalism: Myth or Reality. (2016)</li> <li>• Water disputes between States in federal India. (2016)</li> <li>• Biased media is a real threat to Indian democracy. (2019)</li> </ul>

International Relations	<ul style="list-style-type: none"> <li>Has the Non-Alignment Movement (NAM) lost its relevance in a multipolar world? (2017)</li> </ul>
Technology	<ul style="list-style-type: none"> <li>The modern doctor and his patients. (1997)</li> <li>Value-based science and education. (1999)</li> <li>The march of science and the erosion of human values. (2001)</li> <li>Spirituality and scientific temper. (2003)</li> <li>The lure of space. (2004)</li> <li>Science and Mysticism: Are they compatible? (2012).</li> <li>Science and technology is the panacea for the growth and security of the nation. (2013)</li> <li>Technology cannot replace manpower. (2015)</li> <li>Digital economy: A leveller or a source of economic inequality (2016)</li> <li>Cyberspace and internet: Blessing or curse to the human civilization in the long run (2016)</li> <li>Social media is inherently a selfish medium. (2017)</li> <li>Alternative technologies for a climate change resilient India. (2018)</li> <li>Rise of Artificial Intelligence: the threat of jobless future or better job opportunities through reskilling and upskilling. (2019)</li> <li>Technology as the silent factor in international relations. (2020)</li> </ul>
Education	<ul style="list-style-type: none"> <li>Restructuring of Indian education system. (1995)</li> <li>Literacy is growing very fast, but there is no corresponding growth in education. (1996)</li> <li>Irrelevance of the classroom. (2001)</li> <li>Privatization of higher education in India. (2002)</li> <li>Modern technological education and human values. (2002)</li> <li>What is real education? (2005)</li> <li>“Education for all” campaign in India: myth or reality. (2006)</li> <li>Independent thinking should be encouraged right from the childhood. (2007)</li> <li>Is an egalitarian society possible by educating the masses? (2008)</li> <li>Credit-based higher education system – status, opportunities and challenges. (2011)</li> <li>Is the growing level of competition good for the youth? (2014)</li> <li>Are the standardized tests good measure of academic ability or progress? (2014)</li> <li>Education without values, as useful as it is, seems rather to make a man more clever devil. (2015)</li> <li>Destiny of a nation is shaped in its classrooms. (2017)</li> <li>Youth is a blunder, manhood a struggle, old age a regret. (1994)</li> </ul>

- Useless life is an early death. (1994)
- Disinterested intellectual curiosity is the lifeblood of civilisation. (1995)
- When money speaks, the truth is silent. (1995)
- Our deeds determine us, as much as we determine our deeds. (1995)
- Truth is lived, not taught. (1996)
- True religion cannot be misused. (1997)
- Search for truth can only be a spiritual problem. (2002)
- The paths of glory lead but to the grave. (2002)
- If youth knew, if age could. (2002)
- There is nothing either good or bad but thinking makes it so. (2003)
- Discipline means success, anarchy means ruin. (2008)
- Be the change you want to see in others. (2013)
- With greater power comes greater responsibility. (2014)
- Words are sharper than the two-edged sword. (2014)
- Character of an institution is reflected in its leader. (2015)
- Quick but steady wins the race. (2015)
- Lending hands to someone is better than giving a dole. (2015)
- Need brings greed, if greed increases it spoils breed. (2016)
- "The past" is a permanent dimension of human consciousness and values. (2018)
- Reality does not conform to the ideal, but confirms it. (2018)
- Attitude makes habit, habit makes character and character makes a man. (2007)
- Joy is the simplest form of gratitude. (2017)
- A good life is one inspired by love and guided by knowledge. (2018)
- A people that values its privileges above its principles loses both. (2018)
- Customary morality cannot be a guide to modern life. (2018)
- The past' is a permanent dimension of human consciousness and values. (2018)
- A people that values its privileges above its principles loses both. (2018)
- Reality does not conform to the ideal, but confirms it. (2018)
- A good life is one inspired by love and guided by knowledge.(2019)
- Wisdom finds truth. (2019)

	<ul style="list-style-type: none"> <li>• Values are not what humanity is, but what humanity ought to be. (2019)</li> <li>• Courage to accept and dedication to improve are two keys to success. (2019)</li> <li>• Life is long journey between human being and being humane. (2020)</li> <li>• Mindful manifesto is the catalyst to a tranquil self. (2020)</li> <li>• Ships do not sink because of water around them, ships sink because of water that gets into them. (2020)</li> <li>• Simplicity is the ultimate sophistication. (2020)</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>• We may brave human laws but cannot resist natural laws. (2017)</li> </ul>
Sports	<ul style="list-style-type: none"> <li>• Fifty Golds in Olympics: Can this be a reality for India?</li> </ul>
Culture	<ul style="list-style-type: none"> <li>• Culture is what we are, civilization is what we have. (2020)</li> </ul>
Internal Security	<ul style="list-style-type: none"> <li>• Management of Indian border disputes – a complex task. (2018)</li> </ul>

Once we know the types of essays preparation entails collecting **quotations, anecdotes, case studies**, data from sources like reports by **global, national and state level organisations, census**, etc., and designing diagrams. After having collected appropriate content, we should look at how to use it when we write an essay.

## Attempting the Essay Paper

### Topic Selection

To select a topic for the essay it's important to choose a strong and engaging topic so that the audience will more easily understand. For that, from the topic of the essay we should differentiate the base and the argument. The base indicates the broad topic of the essay. The base is something that should help us figure out which of the 7 types (mentioned at page no. 13 in bold) is the essay about. On the other hand an argument indicates the specific issue the essay deals with in the broad field defined by base. Things will become clearer with the following examples from PYQs.

1. Truth is lived, not taught. (1996) - Base - Truth; Argument - Lived, not taught
2. Privatization of higher education in India. (2002)- Base - Higher Education; Argument - Privatization
3. Discipline means success, anarchy means ruin. (2008) - Base - Discipline, anarchy; Argument- success; ruin

4. Are the standardized tests good measure of academic ability or progress? (2014)  
- Base - standardized tests; Argument - academic ability or progress
5. Digital economy: A leveller or a source of economic inequality (2016) - Base .  
Digital economy; Argument - economic inequality
6. Destiny of a nation is shaped in its classrooms. (2017)- Base - shaped in its  
classrooms; Argument- Destiny of a nation
7. A people that values its privileges above its principles loses both. (2018) - Base .  
people that values its privileges above its principles; Argument - loses both
8. Alternative technologies for a climate change in resilient India. (2018) - Base in  
Alternative technologies; Argument-climate change resilient India
9. Biased media is a real threat to Indian democracy. (2019) – Base-Biased media;  
Argument threat to Indian democracy
10. Technology as the silent factor in international relations. (2020) – Base -  
Technology; Argument – international relations

We should pick up the topic with whose base we are comfortable. It has been found that if we are comfortable with the broad topic of the essay we are likely to develop the content relatively comfortably.

### Defining Broad Framework of The Essay

The second step after topic selection is to frame thematic questions (i.e. 5Ws and 1H - Who, When, What, Where, Why and How) each of which should address a perspective of the essay topic. These questions should be designed in such a way that incorporates as many perspectives of the essay as possible. These questions help us define the broad outline of the essay and answering these questions should help us produce a holistic text on the topic. One need not necessarily frame questions for each of the 5Ws and 1H. Also the questions we frame need not necessarily be restricted to 5Ws and 1H. The idea of framing questions based on 5Ws and 1H is only indicative - its neither mandatory nor exclusive. We can frame as many questions as we think are relevant to the essay topic. We can frame questions in any wording that we think is relevant to the essay topic. Following examples may help clarify the idea:

**Topic:** Destiny of a nation is shaped in its classrooms. (2017)

#### Questions:

1. Why is the destiny of a nation shaped in its classrooms?
2. How are is humanity doing in the classrooms?
3. What are the challenges we are facing in classrooms?
4. Why are we facing those challenges?
5. What can we do to overcome those challenges?

**Topic:** Customary morality cannot be a guide to modern life. (2018)

**Questions:**

1. How does customary morality hinder the march to modernity?
2. Why does customary morality exercise so much dominance?
3. Is customary morality all bad?
4. How can we ensure that customary morality does not restrict the march to modernity?

**Topic:** Best for an individual is not necessarily best for the society (2019)

**Questions:**

1. What is best for individual may or may not be best for the society ?
2. Why does it happen that best for the individual may or may not be best for the society?
3. Can it happen that worst for the individual is the best for society?
4. How can we make sure that best for the individual is best for the society too?

While framing the questions one must think about various possible interrelated ideas of the essay topic and try to cover all the fields relevant. The examiner must not be left with any unanswered questions in their mind after having read our essay.

As we saw above the historical aspect deals with the evolution of the problem at hand. Social, political, economic, cultural, environmental, international, geographical, humanitarian, ethical, sports, technological, etc., aspects of the essay are one of the many perspectives of the essay. We are free to choose to end our essay with a discussion of these aspects (which broadly cover the what perspective) or we could cover other perspectives as well.

Coverage of other perspectives (5Ws and 1H) help us delve deeper and wider into the topic. Successful candidates have been known to use both the strategies. However, it may be observed that covering other perspectives as well leads the reader to be naturally curious about the solution of the problem at hand. This not only provides for a holistic read but also enables the reader to associate more intuitively with the essay, thereby translating into score. So in our opinion it is advisable to frame questions covering many more perspectives rather than just the what perspective as explained above.

Having framed thematic questions we need to develop answers to the said questions. Along with answers to the thematic questions, we need to ensure we devote equitable space to these answers. Amount of space will depend on the context of the essay topic. However, broadly we can divide the entire 10 to 11 pages as follows:

1. 1.5 to 2 pages for opening discussion aka introduction (explained later).
2. 5 pages for the aspects aka body (explained later).
3. 0.5 to 1 pages for the counter-thesis aka body (explained later).
4. 1 page for exploring the underlying reasons aka pre-conclusion (explained later).
5. 2 pages for solutions/closure aka conclusion (explained later).

Iteratively with allocating space, answers need to be brainstormed for each of the questions framed/ perspectives. One can and does impact the other and a balance between both develops a holistic body of text. This entire exercise is supposed to be a part of the brainstorming session.

## Brainstorming Session

This session usually entails about 20-25 minutes of the 1.5 hours devoted to each essay. This session has two purposes – introspecting content and structuring it in the broad- heads as explained above.

**Introspecting** usually works on two lines – free run and predefined coverage.

1. **Free run:** During the free run we should cover and note down anything and everything relevant to the essay that comes to our mind. One should not let the mind be restricted by the questions framed (as per 5Ws and 1H) or which aspect does the idea relate to. It is at this point one can think of quotes, diagrams, case studies, data, anecdotes, etc.
2. **Predefined coverage:** This should always follow the free run. More often than not we miss some perspectives during the free run. During the predefined run we are supposed to pick up the questions framed above and find answers to all of these. Following can be the pointers to develop answers to various perspectives.
  - **Historical:** ancient, medieval and modern.
  - **Social:** casteism, religion – secularism and communalism, marginalised sections – ST, SC, OBCs, minorities, women, differently-abled people, senior citizens, children, classes – rich and poor, institutions – marriage, family, etc., crime
  - **Polity:** preamble (justice liberty equality and fraternity, sovereignty, socialism, secularism, democracy, republic), natural justice, basic structure of constitution, fundamental rights, directive principles of state policy, fundamental duties, good governance-participatory, consensus-oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law, citizen centricity, social audit, judiciary and cases, political parties, e-governance, elections and electoral politics and associated reforms, institutions – constitutional, statutory, executive, NGOs etc., local self governance.

- ◆ **Economic:** agriculture and allied sector, manufacturing and industry, services- traditional corporates and advanced (IT and ITES), equality and inclusion, finances, employment, skill development, resource mobilisation and investment, PPP.
- ◆ **Cultural:** food, dance, music, theatre and movies, linguistic, literature, architecture, paintings.
- ◆ **International:** neighbour, regional, global, unconventions, treaties, pacts, international bodies – WB, IMF, WTO, UN etc., geopolitics, geo-economics and geo-strategic aspects.
- ◆ **Ethical:** values, virtues, ethics and morality, categorical imperative etc., attitude, aptitude, emotional intelligence, work ethic.
- ◆ **Humanitarian dimensions:** compassion, rights and empathy.
- ◆ **Geographic:** human and physical geography, economics aspects.
- ◆ **Environmental:** global warming and climate change, man-animal conflict, disasters, flora and fauna, ecological footprint, land, air, water, wildlife, sustainable development.
- ◆ **Sports:** sports in India and abroad, values associated, technological and administrative developments.
- ◆ **Scientific and Technological:** media – print, electronic and social media, AI, big data, augmented reality, virtual reality, 3D printing, robotics and automation, internet of things.

These are just illustrative sub-heads for the what and why perspectives. The brainstorming may include these but does not have to be limited to these. Furthermore, brainstorming should cover other perspectives as well.

## Structuring the Essay

Having seen what needs to be incorporated in the essay, we need to focus on how it needs to be presented. This leads us to categorising the brainstormed content into in the order of introduction, body, pre-conclusion and conclusion. So that we are able to align our content properly we should understand what each of the above entails.

### Introduction

As indicated above introduction is supposed to be presented in the first two pages of the essay. The main goal of an introduction is:

1. To show the examiner that we have understood the essay topic – both base and argument.
2. To give the broad outline of the essay.
3. Interpretation of the keywords of the topic.

The first goal can be fulfilled by

### 1. Stories

- ♦ From the life of eminent personalities (dead or alive).
- ♦ Excerpts from Mythology.
- ♦ Fiction.
- ♦ Anecdotes from real life.

### 2. Dramatic start

- ♦ Sensational fact or data (before 2100 Maldives, Tuvalu and many more islands will be submerged due to sea-level rise consequent to global warming).
- ♦ Paradox (like India is a food surplus country yet more than 7,000 people die of hunger everyday in India).

### 3. Current Affairs related to the essay topic

- ♦ Recent news.
- ♦ Excerpts from reports by well-renowned national or global organisations (eg. Global Risks Report by World Economic Forum on climate change, OXFAM reports on poverty).

4. Statement by eminent personalities (concerns expressed by Mr. Elon Musk and The Late Dr. Stephen Hawking on artificial intelligence).
5. Description or definition based start (least recommended) like the kind we see in most editorial, op-ed. article in mainstream newspapers.

While the description is the easiest and the most way to explain our understanding of the essay, it is least recommended for the fact that it tends to be very bland and monotonous. However, short of other options we can always rely on description. Personally, I believe that introduction should have a humanitarian touch so that the examiner is hooked to the essay on a personal level right from the introduction.

Once we have used one of the above techniques we need to link the story/data/current affairs/statements by eminent personalities mentioned to the topic of the essay. This is done by picking up the crux of the story/drawing a lesson from it that explains the topic. Using the fact/data/paradox/statement by eminent personalities to explain the essay topic (like in the above example the sensational data explains the real impact of climate change, the paradox explains the urgent need to work on food security and distributive justice).

The second purpose can be achieved by giving hint of the perspectives that we are going to be covering in the essay. It is here that we should set out the primary idea of the essay clearly so that the examiner knows exactly what they are going to find in the essay. This saves them from the exercise of picking up ideas while reading the essay on their own. Thus it enhances the ease through which they can go through and understand our essay. On the very first reading they are able to appreciate the point being made and

connect it with the essay topic because they had a clear cut idea of what was coming in the essay.

1. This can be done by using:
  - ◆ Language that excites curiosity either by being argumentative. For example the essay explains need to prepare for the second cold war which might not be as far as some of us might think ... in fact it might be underway already.
  - ◆ Example of question: In this essay we will see why public healthcare system needs to focus on primary healthcare as a top priority?
2. If needed state your opinion outright. This needs to be done only in 'or' kind of essays where the topic specifically gives us this leeway.

The third purpose of the introduction is to provide a description of the keywords that are going to be interpreted and discussed in a broad manner. For instance in the topic "Best for an individual is not necessarily best for the society" the word individual need not necessarily mean a person, it can mean a religious community, a gender, a class of persons, a market player - be it buyer or seller, an age group, a species, a state in the country, a nation in the world, a business entity, a political party. The idea here is that to cover the various perspectives we take a much broader than literal interpretation of a particular keyword. This is not naturally intuitive to the examiner. Hence, the in the absence of the description in introduction the burden to understand the interpretation made falls on the examiner (when we eventually use this interpretation in the body of the essay). Examiner has to go through few lines to understand the interpretation and then read them again to understand the argument made. This creates a lag and an abruptness in the reading of the essay which translates to lesser marks.

An alternative to this abruptness is to explain the relevant beyond-literal interpretations at the start of each paragraph. This leads to clear linkage of the interpretation and the essay topic in the mind of the examiner. However, this causes entails for a monotonous structure of essay and also has an opportunity cost of one line at the start of every paragraph. Hence, it is advisable to do that in the introduction itself.

Having completed the introduction, we shift to the body of the essay.

## Body

The body of the essay entails a discuss on various perspectives of the essay. Overall the direction of the essay has to be from past to present to future. This makes for a very chronological and intuitive read. Hence, it is advisable that we pick up the perspective or the question (framed during brainstorming) that explains the historical origin and evolution of the said problem. Here, the key question to be answered can be 'when' did the issue at hand takes root? 'How' did we get to the current situation? After having covered the historical perspective one may choose to cover one of the social, political, economic, cultural, ethical, technological, environmental, international, geographic, sports, etc.,

perspectives of the essay. These perspectives explain the present situation of the issue, thus covering the present part of the chronology.

It is advisable to devote one page each to the social and economic aspects. It has been seen that designing the paragraphs such that there are three paragraphs per page enhances the readability of the essay. Other than connector paragraphs (explained in "concept of flow") average length of the paragraph should be about 30–35 words. This means a paragraph should have about 3–4 sentences.

The first sentence is supposed to put for the argument pertaining to a social and political aspect. This is a simple and straight-forward assertion that we make. It can discuss the impact of a phenomenon to make a point. The second sentence should be an explanation of the assertion made in the first sentence. The third sentence has to be an example, fact, case study, etc., to substantiate our argument in real life and draw the point home. Data, examples, expert opinions and constitutional provisions can be used to provide substantiation to our argument. For instance, for a topic like "Social media is a pillar of democracy" this can be a paragraph in the essay.

Social media has deepened social democracy globally. Today, even the powerless can present their opinions and share information globally in real time. The 'MeToo' movement exemplifies how the victims joined forces globally to fight systemic injustices.

Generally, it is advisable to cover 3 points in each of the social, economic and political aspect. It gives a sense of logical flow and agreeability if we follow a bottom-up strategy in social, economic, etc., aspects. This can be executed by focusing the discussion on the following units in the mentioned order – Individual, Family, Professional Workplace, Society, Community, National, Global.

This way we can cover various aspects while maintaining a proper balance between the content and the presentation of the content (thereby enhancing the readability of the essay).

Having covered the various aspects we can move to the anti-thesis. By anti-thesis we mean the other side of the coin. It must be borne in mind that nothing is entirely black and white and that there is always a grey aspect to things. This means that even though the essay topic commands us to stick to a certain aspect of an issue, there is a shade of opinion which disagrees with the essay topic and which can be substantiated with logical arguments and fact.

For instance, for the essay topic "Customary morality can never lead to modernity" the anti-thesis can be the timeless ideas of "atithi devo bhava" or 'vasudhaiva kutumbakam' espoused by Indian culture and lifestyle. The topic 'Best for an individual is not necessarily best for the society' asks us to show best for the individual may or may not be best for society. Here the anti-thesis can be even worst for the individual can also be the best for society. An example can be a soldier who lays down his or her life for the security of the

nation. The line of thought here is while on the one hand death is worst for the individual, but on the other hand safety and security is best for the society as a whole.

Now the question arises that on the one hand we are advised to stick with the essay topic and on the other hand we are being advised to cover the anti-thesis. While it may sound contradictory at first the answer lies in the space devoted to the anti-thesis. The anti-thesis must never be larger than a page. Usually one or two paragraphs are good enough to cover it. The idea of the anti-thesis is that

1. It has to be included to show the examiner that we as candidates are capable of thinking about the issue from every perspective even if UPSC has chosen itself to restrict it to one.
2. Since, UPSC has chosen to restrict itself to one perspective we will devote most of our time and energy to the same, hence the anti-thesis should not be so long that itself becomes a digression from the topic.

So in nutshell the anti-thesis will show the diversity of our thought while respecting the directions of UPSC. This is a part where you can make your essay stand out from everyone else who may just cover social, political, economic, etc., aspects.

Having covered the various aspects and having given the anti-thesis we need to move towards the conclusion. The transition from body to conclusion is done through the pre-conclusion. Let's see what that entails.

### Pre-conclusion

While the pre-conclusion sets the tone for the conclusion, it can be used to cover another perspective that we developed during brain-storming. One of the perspectives to be covered here can be 'why' does the particular challenge exist? Here we can delve into the moral as well as the ethical issues at the base of the problem. We can discuss systemic/institutional causes of the problem as well. We can discuss the causes at the individual, group/ community/ collective/ organisational level, national, regional or international level. This discussion of causes will be automatically link the pre-conclusion with the body of the essay. While the problem was discussed in various aspects in the body, the causes of the problem (in its various aspects) being discussed here will develop an organic linkage between the body and the pre-conclusion.

Not only does it have academic utility but let's appreciate the exam-oriented utility of the pre-conclusion. This part is where we can display our analytical skills to the fullest. We have displayed our knowledge of the present situation (in the various aspects). Now, this is where we can display our understanding of the evolution and causes of an issue. This can be the defining thesis statement of our essay and can set our essay class apart from others. This is where we explore the topic deeper than what we do in the GS paper which mostly deals with a 'show of knowledge and less of understanding'.

A discussion of the causes of the problem logically leads to the quest for solutions which is what the conclusion is all about! The deeper we analyse the problems the more targeted will be our solutions.

## Conclusion

The conclusion is supposed to be the last part of the essay. It's where we bring out the futuristic aspect of an essay thus completing the chronological coverage of history to present to future. We have already explained that one of the qualities that the essay paper intends to check is how optimistic the candidate is. Optimism here does not mean being unrealistic. Optimism means being able to look on the positive futuristic side of things while being grounded in reality. It means being imaginative but at the same time the imagination should produce ideas that can produce results that can work within the constraints of reality. Being optimistically imaginative while keeping our bearings aligned with reality would translate to solutions that can solve the problems we discussed in the body of the essay. That would be best achieved if we target our solutions to the root causes of the problems we discussed in the pre-conclusion.

Having understood the idea of the conclusion, let's see how do we actually go about writing it. The conclusion for an essay usually covers about 2 pages. The conclusion, as opposed to the body, can follow a top- down approach. While giving solutions, one can mention what the government (India, foreign and global governance institutions) has been doing to address the problems enumerated in the essay. Similarly, one can give their suggestions regarding the solutions government(s) could implement. Following the top- down model the next step can be what NGOs have been doing or can do as a solution to the issues mentioned. The last level can be what we as individuals have been doing/ can do. This kind of structuring generally works well for non-philosophical essays.

For philosophical essays, a slightly different approach is needed. In a philosophical essay, along with the above we need to mention learnings from this 1.5 hours of intellectual exercise. How those learnings are being implemented at the government, civil society and individual level. In addition, to this we can also explain how those learnings can be implemented at the aforementioned levels.

Another purpose of the conclusion is to give the feeling of completeness to the essay. This can be done by clearly deciding what exactly will be the thesis statement of the essay, what problems will be raised in the essay that can be solved in the conclusion. The entire essay, from aspects to perspectives to pre-conclusion to conclusion, can be designed around this thesis statement. Building on this statement will be the final conclusion which will automatically give a sense of completeness to the essay. This is a sort of a conclusion to introduction kind of approach which is opposite of the introduction - body - conclusion approach discussed so far.

The last paragraph of the essay can be designed on a more personal/ individual/ humanitarian note. It is always a good idea to show compassion in the last part of the

essay (conclusion) and last part of the conclusion. This approach has an exam related value. The conclusion is the last thing what the examiner will read just before they award you marks. It is your last chance to persuade the examiner to your point of view and to impress yourself regarding your essay and clarity your feelings about the issue. The cumulative connect you have developed with the examiner either through the diversity of your coverage or through insightfulness of your ideas or through the creativity and freshness of your ideas will culminate here. Hence, it's very important to end the essay on a note that touches the examiner and to which the examiner can connect on humanitarian and personal grounds.

This can be done by giving a very optimistic vision of future which can be achieved by implementing our suggestions. We can do that by connecting the conclusion back with the introduction. By giving a happy ending to the anecdote we might have started in the introduction or by giving a solution to the problem or a paradox we might have mentioned in the introduction.

Alternatively, we can implore the examiner 'take a vow' to address the problems discussed. We can also achieve the same effect by using rhetoric, high sounding lofty expressions, constitutional ideals, slokas and quotes to bind the essay in one line. These can be used to substantiate the central thesis or the learning we have drawn in the essay thereby give it a sense of closure.

Furthermore, we can keep the examiner hooked to your essay even after it has ended. That can be done by leaving an optimistically framed question at the end of your essay (for instance, with a workforce trained in state-of-art technology, a compassionate society rich in social capital, a polity fuelled by the ideas of youth and wisdom of elders, infrastructure designed to serve the needs of present as well as future generations can the dream of the Vishwaguru Bharat be far away? Will it not achieve Gandhiji's vision of Sarvodaya and wipe tears from every eye?).

## Back To Structuring Again

Having seen what introduction, body, pre-conclusion and conclusion entail, we need to understand how to structure the essay. We understand the procession from intro-body-conclusion (including pre-conclusion) and the general flow from history to present to future. But now we need to understand how to achieve this structuring when we are about to start writing.

For that we need to go back to the brainstorming session again. Reason being after having completed the brainstorming session we need to decide the content that will go into the essay and in which part it will go. For every aspect of social, economic political, etc., it is enough to present three points. Right after brainstorming is when we decide and mark which of the points are to be presented. I used to mark the points as S1, S2, S3 or P1, P2, P3 for social and political points respectively. C1, C2 and C3 was used for conclusion.

This was done in the very same page where I have noted down the points from the brainstorming. This helps us to execute the bottom-up or top-down perfectly. Any other system can be chosen as per convenience.

But it's important to ensure that the entire content and order of what is to be presented in the text of the essay is decided before we commit pen to paper. This is important because we have limited words to present our ideas and any digression will cost us at least a paragraph to come back to track. Besides, it will be very undesirable if we come up with an impactful point during brainstorming and miss it solely because we did not sort and earmark our content properly before writing.

After structuring to present the content in a logically agreeable and intuitively connectable manner one last step is needed so that the entire essay becomes one coherent body. This is needed so that each section draws from the preceding one and leads to the following one. The way to do is to develop the ever-talked about and never clearly explained mythical concept of flow.

## Concept of Flow

The whole essay really becomes one coherent text when one paragraph is organically linked to the next. Flow is said to have been achieved when the examiner cannot perceive the 'shift' from one paragraph to other while reading our essay. This happens when after having read one paragraph (clearly demarcated or not – both ways work fine), the reader should logically and naturally feel curious about the next paragraph that has been presented. Answer to one thematic question should logically make the reader inquisitive about the next question.

Personally, I struggled a lot with flow. Being an engineer, writing long pieces of text was not in my comfort zone. On top of that, my peers would review my essay and say flow is missing ... but no one could clearly tell how to develop it. Over the years, I came across some and developed some techniques to achieve this flow.

**1. Use of connector sentences:** A connector sentence states what has been explained/discussed and based on that makes a logical assertion announcing what is coming next. That way it not only refreshes what has been covered but also gives the examiner a couple of seconds to think about what should be next. When what the examiner thinks should follow and what we have actually written in the next paragraph are the same, it's then when the examiner feels most connected to our essay. Obviously, it will help our score. There are many ways to develop connector sentences. We can even find examples of these in this very strategy that has been presented. Few ways to do so are:

- Statement connector to move from body to pre-conclusion. For example "Having dwelled upon the social, economic, political, etc., aspects we should delve in to the causes of the aforementioned issues". Here, it's natural for

the examiner to ask why after having seen what ... and when we do that it instantly hooks the examiner to our essay.

- Statement connector to shift from one aspect like social to economic – For e.g. "patriarchy not only works in social settings like purdah system but also has an economic aspect to it like gender wage gaps". Then we can delve into economic aspects. Here keywords social refreshed the examiner that social aspect has been covered and tells the examiner that economic aspect will follow.
- Question connector - Presenting anti-thesis. For instance "From the above discussion, it is apparent that customary morality cannot lead to modernity, one needs to wonder is it always the case?" This is more a engaging way as it implores the examiner to think thus hooking them into our essay.

2. **Connecting following paragraph using content:** For instance, we are moving from one aspect (social) to another (political). That can be done by aligning our content to present purely social aspects, then presenting socio-political aspects and then moving to political aspects. For instance in an essay on casteism after discussing how it has stratified the society into groups which follow endogamy, socialise only within themselves and even cause social evils like untouchability and crimes like honour killings we can discuss issues like how in rural hinterland today so-called lower castes are forced to vote in a ceration way, thus presenting a socio-political aspect. Then we can move even more strictly political aspects like caste based vote-bank politics.
3. **Indicatives:** This can be done by explicitly using terms like social, socio-political, political, economic, etc., in the start of the next paragraph. Here no separate connector sentence is used. For instance "Not just social, but patriarchy also manifests in economic domain". This clearly states the economic aspect is to follow.
4. **Using keywords from the essay topic:** It is always advisable to use keywords of the essay topic in our essay. That not only helps us keep our essay focused on the topic but also helps the examiner understand our point and connect it with the essay topic quickly. This improves readability. We can also use it for building flow. For instance in the essay "Rise of Artificial Intelligence: the threat of jobless future or better job opportunities through reskilling and upskilling" the keywords are Artificial intelligence, jobless, reskilling, upskilling. A good essay would discuss them all. A better essay would not only discuss them all but also move from rise of AI to explain joblessness to reskilling those let off in other skills, and then to upskilling, while using these same keywords in the paragraphs so the examiner connects them to the topic easily.

5. **Connector words:** Last but not the least is the use of connector words like furthermore, moreover, also to move from one aspect to another (for instance, social to international). Words like however can be used to shift to the anti-thesis. Words like nevertheless can be used to signal the shift to solutions. This is the easiest way to execute a shift while avoiding disruptions.

## SOME USEFUL TIPS

Having covered broadly what essay is about, we should look at some tricks that need to be kept in mind while attempting the essay:

1. Understanding command directives in the essay: there can be several command directives like 'and', 'or', '?'.
  - ♦ Often we are confused about the difference between the 'and' and 'or' directive. The difference is simple in the 'and' directive we are required to cover both aspects and our opinion is not needed. Please note that in 'and' kind of topics we do not have any such leeway of making choices and stating opinions. In such topics we are required to cover both the opinions to justify both.
  - ♦ However, in the 'or' directives we are still required to cover both aspects in the discussion but we need to clearly state and justify our opinion (one of the two options) as well.
  - ♦ Same goes for the '?' directive. We need to discuss both aspects. This like in the 'or' directive shows the width of our thinking. However, as in the 'or' directive from the given alternatives we need to make a decision and substantiate it with logical arguments.

Let us realise that we should avoid taking extreme views. Our essay should reflect our balance of judgement. This might seem contradictory with what we just saw about handling the 'or' directive. But it's not. It needs to be borne in mind that to avoid extreme views does not mean not taking a decision at all. We must realise that we are aspiring bureaucrats. The way to be a bureaucrats is not to be indecisive. We need to take decisions at the end of the day. However, balance in the decisions is brought by being able to analyse the cons of our choice and pros of the choice not made. That way when we do make a decision it is well thought out and conscious and not just a casual one. When we do make a choice in the essay with the 'or' directive we come across as an aware, analytical, rational and conscientious individual. These are few of the qualities being tested in the essay paper.

Another thing to keep in mind is that while we are allowed to have an opinion and present it, we must make sure it is well thought out by weighing all the alternatives with each other and at the same time it must be respectful to all other views as well. In other words, we are allowed to have an opinion but we must not look down upon the other shade.

Also, when we do give a final opinion on an issue, it's advisable to avoid extreme or highly unpopular opinions. We can do so in the privacy of our minds but we should not take that risk with UPSC CSE.

2. Keeping the examiner engaged - That can be achieved through a number of ways.

- ◆ One way can be through use of diagrams like flow charts, pie charts, bar charts, tables, bubble diagrams, etc.
- ◆ Another way is by using questions. We have understood that we need to present logical arguments in the essay to support our opinions. One way to present our arguments can be stating it in the form of a sentence. Another way can be framing the same argument in the form of a question. For instance in an essay on capitalism while discussing its ill-effects one can deal with social and environment aspects as follows.

"Capitalism leads to exploitation of labour to cut costs and maximise profits. This leads to widen inequality. Poor standard of living for the masses, sanitation facilities and unhygienic living conditions for working class in London in 18th and 19th centuries show this.

Capitalism also leads to environmental degradation. Industries have no incentive to spend on environmentally friendly expensive technology, but a disincentive of reducing profits. This can be seen in both London smog of 19th and 20th centuries as well as Volkswagen car scandal."

Another way to say the same thing can be:

"Exploitation of labour to maximise profits is a well known issue with capitalism. But can it lead to lowering standard of living for the masses? Does the unhygienic living conditions for working class in London in 18th and 19th centuries not show this.

No only economic inequality but capitalism lead to environmental degradation as well? The Volkswagen scandal and the London smog of 19th and 20th centuries clearly show that capitalism disincentivizes environmentally friendly expensive technology due to reducing profits."

Of the above two which one did you find more engaging? Of course asking questions can only be one arrow in our quiver. In other words, not every argument can be posed as a question. Otherwise our essay will read more like a question paper rather than an essay".

3. It has been emphasised elsewhere too that we need to show our humanitarian and compassionate aspect at at least two to three places in the essay. This can be done by showing compassion for the marginalised sections of the society like women, children, SC, ST, OBC, senior citizens, etc., This can be done in

introduction to make a sensational start or in the body while framing and argument. This can also be done in the conclusion while giving a solution or by linking the conclusion in the introduction. The last paragraph where we give an optimistic and futuristic end is also a good place to show our compassionate aspect. All these techniques have been discussed already. An example would help. While talking about food security we can say:

"While we are a self-sufficient nation in terms of food production, it is a matter of great agony that even today 7,000 people die of hunger daily in India. Due to mismanagement of the produce children suffer from stunting, wasting and underweight. We call them future of our nation while in reality we are threatening their future and ours due to this mismanagement of food."

4. While essay is about presenting our analysis of a situation, its causes and giving solutions so it would be more desirable if we don't reproduce the solutions by committees and eminent personalities. It's great if we are able to give innovative ideas in our solutions, but it might not always be possible. In that situation, I used suggestions given by committees and eminent personalities liberally (without quoting them). This is advisable if you understand their solution, if you agree with it and if it has not been implemented yet.
5. In comparative essays one needs to show the pros and cons of the available choices and then make a choice. However, we can earn extra score if we are able to solve the cons of the less preferred alternative through our chosen alternative. In addition to this, it would be great if we are able to analyses the cause of the cons of our alternative and give solutions for them as well. For instance in the essay "is democracy the best setting for economic growth?" We need to show pros and cons of both democratic and authoritarian regimes as far as economic growth is concerned. Suppose we prefer democracy, we need to show that it solves the cons of authoritarian setting. Moreover, we should also delve into the cause of cons of democracy and try to give solutions for them as well.
6. For us to be able to score better, not only our content but also our language has to be impactful. That comes with practice. But a shortcut to achieve that is to note down powerful sentences, paragraphs, and quotations whenever we find them and start using them in our essays.
7. While selecting a topic our knowledge is the first priority.
  - ◆ We must not select an obscure topic thinking less candidates will attempt and thus we may score well. If we are not comfortable with the obscure topic we are bound to write a mediocre essay and end up with less marks. Instead, we should select a topic we are comfortable with regardless of how many people are likely to attempt it. Its true that mind of the examiner tends to compare one essay on a topic with the other on the same topic. But, its also true that everyone of us has unique way of thinking and when we apply ourselves

we will produce a unique learning which is bound to be appreciated and rewarded.

- Selecting a topic about which we are too passionate or feel strongly about may get us too excited. This might lead to a failure in writing a balanced essay. Hence, one should be calm and patient while selecting the topic. Similarly, we must cover both sides of the coin and select a topic which we can do such justice. Topic selected should be such that we do not go ranting about one shade of opinion because we subscribe to it and feel very strongly about. It should be such that we have enough content to provide a proper discussion of pros and cons of each shade of opinion in a fair and objective manner.
- Some very superficial level of brainstorming has to be done while selecting the topic. We may or may not note down the points that come to our mind just yet.
- If there is a technical term in the topic, before selecting it we must be absolutely sure that we understand it correctly. Otherwise the entire essay can literally gets derailed.

8. We must highlight/underline the core point or keyword in every paragraph. Thus in every page about 4 to 5 words or phrases must be underlined. Over underlining reduces the impact and thus the utility of underlining. Using this optimally enables the reader to grasp the essence of each paragraph in a glance, thus improving their readability and our score.
9. We must avoid making political/controversial statements. Everything we say must be consistent with Constitutional values and existing laws at all times. We should be democratic while addressing issues. We must avoid taking absolutist/extreme positions. We should try not to make sweeping generalisations on any given issue. Instead, we must exercise patience, justice and understanding in addressing or discussing any given topic.
10. Be on the look out for quotes, real life stories and anecdotes that you can use in the essay paper whenever you read books or newspapers. Collect statements by eminent personalities to support your arguments.
11. It is desirable to place the critical paragraphs at the last, however there is no hard and fast rules. For some topics they may even be used as an opening paragraph.
12. We must not question/contradict the topic itself. If we do not agree with the topic or have difficulty finding arguments to explore various aspects of the topic, then it's better to pick another topic.
13. Finally, some tips on the language that should be used in the essay:
  - Write in a clean and organised manner. Handwriting does not need to be beautiful but it should be very clear enough to be read easily. Presentation

should be systematic. Paragraphs should be well organised and presented. They should be clearly distinguishable from each other. This can be done by leaving a line blank between consecutive paragraphs. Words should be neatly spaced. While all this is not contingent on knowledge still it enhances the readability of our essay, thus translates to 1 to 2 extra marks towards the end when the examiner is able to move through our essay very smoothly. Let's not undervalue the one mark. It can literally change our service(s).

- ◆ As already mentioned a paragraph should be about 35 words. This can vary depending on the argument but should not go beyond 50 words. There should be 3 or at least 2 paragraphs per page.
- ◆ We should use simple and coherent words and sentences. Using difficult/unusual words or irrelevant sentences doesn't look impressive. It makes our text answers look forced. We should avoid that. It has been told essay is not the test of our prowess in language and literature. Difficult words reduce the readability of our essay by making it difficult for the examiner to understand and connect with the essay. Having said that, occasional use of a powerful word, or a good phrase definitely gives your write-up an edge. But then, if we do use complex terms like 'constitutional morality' we should define it just before we use it. That way the examiner can clearly understand our point.
- ◆ We should avoid verbosity. Rather it should be crisp and concise. We should not use 4 sentences to tell what can be told in 1.
- ◆ Value addition: If necessary or if there is a scope, we should not hesitate from using examples, quotations, data or anecdotes. It makes our answers more interesting and authentic. But we need to make sure that what we are presenting is relevant and in sync with the topic we are discussing. Also, we must never misquote great personalities. It's better to paraphrase if we are not sure of the exact words rather than misquoting.
- ◆ We need to understand that even though it's not a test of our prowess in the language yet a certain minimum level of command is needed to attempt the essay paper. This includes grammar. This will help us avoid verbosity and present content in a more impactful manner (for instance, by framing grammatically correct and impactful questions). Please understand that our command over language, the lucidity in our writing would not develop overnight. It needs practice and time.
- ◆ We must try and keep our sentences short. Short sentences are faster to read and easier to comprehend. Thus, they are more examiner-friendly hence useful in increasing our score. A simple rule of thumb can be - If we run out of breath while reading a sentence, then it is a good idea to break the sentence into two.

14. We must develop habit of reading, writing, discussing and most importantly thinking.
  - ◆ Participating in group discussion will improve our understanding of the topic and give new points to ponder over.
  - ◆ We should utilise the time of the day spent doing mundane activities to brainstorm on possible essay topics. One day can be spent to ponder over one essay topic. That way we will develop the habit of interlinking ideas which will help us in both essay and GS papers. We will also have a huge repository of points as well as innovative ideas even before we enter the exam room.
15. Practice time-management. Both essays carry equal marks. We must devote equal time to them. 20 minutes spent extra on the first essay will probably give us less reward than spending them for brainstorming properly for the second essay.
16. Do not exceed the word limit, as you will not get any credit for it. In case you do so, make sure you have relevant and riveting content because you are basically asking to extra-work (than reading the 1,200 words that they are expected to according to the word limit).

It is sincerely believed that the above discussion must have been helpful as a starting guideline for us to go about preparing for the essay paper. I would like to emphasise that these guidelines are based out of my own personal experience. These have worked for me hence, I have taken the liberty of sharing them with you. However, each one of us is different. Each one of us has a unique way of thing. We need to realise our own skill set and use it to our advantage. I am fond of saying UPSC CSE is like martial arts and every master has to develop his/her own style. But for that we need consistent practice. So let's be patient. Let's start practicing today. We shouldn't push it to tomorrow. Tomorrow never comes.



**E**ssay Paper is a game changer in your UPSC Mains Exam. I would try to discuss about the right preparation strategy for Essay Paper.

First of all, let us understand the expectations of the Union Public Service Commission from the aspirants appearing in this paper. The UPSC syllabus states:-

“Candidates may be required to write essays on multiple topics. They will be expected to keep closely to the subject of the essay to arrange their ideas in orderly fashion and to write concisely. Credit will be given to effective and exact expression”.

We find in it that the emphasis is on the following four points:

**1. To remain completely focused on the topic:**

The best mantra for the essay writing is to remain connected to the basic idea or theme of the topic. The inclination of the whole essay should be towards the topic. If you cover the positive as well as the negative aspects of that topic, and present your ideas in an organised manner, then it will not be difficult to fetch good marks.

**2. To express your views in an organised manner:**

In fact, an essay reflects not only the writing style of the writer, but it also reflects the writer's knowledge, experience and thought process as well. Many aspirants, though they are rich in their ideas, but while writing an essay they fail to express their ideas in an orderly, organised and well planned manner.

It is better to make a brief framework to express your ideas in a well planned manner and include the various aspects of the topic in this framework, substantiating each aspect with the relevant examples, data and quotes, etc., if any.

**3. To write briefly but comprehensively:**

We must write to the point, but comprehensively and effectively. Remember, you are supposed to write two essays within the limited time frame of three hours, therefore avoid crossing the word limit. Write in paragraphs, but avoid writing long paragraphs. ‘Expressing more ideas in less words’ is a skill, and we should develop this skill.

#### 4. To present an error-free and effective expression:

This is the most important aspect of Essay writing. We will discuss it in detail. However, if you keep the above points in your mind and follow them while writing your essay, then your essay will definitely become more accurate and effective.

To meet the above four-point criteria for writing the Essay paper, you must keep in mind the following 10 points:

- (a) **Flow:** The most attractive feature of the essay writing is its 'flow'. If there is a spontaneous flow in the essay, the examiner will not lose his/her interest while reading your essay. This will definitely help you in getting good marks. Remember, essay is an organised, well planned and sequential presentation of ideas. Therefore, while presenting your ideas, identify the interrelated ideas, and present these interrelated ideas sequentially in your essay. When you complete one paragraph and start writing another paragraph, link the beginning of the second paragraph with the end of the first paragraph. There must be a connection between the two paragraphs. In an essay, such flow can be developed with regular practice.
- (b) **Balanced view:** Instead of choosing the extreme Path, it is better to take a middle path while writing an essay. Buddha's philosophy of 'Middle Path' can be very beneficial while writing an essay. So try to maintain a balanced view as much as possible while expressing your ideas.
- (c) **Comprehensive views covering all the aspects:** If your narrative is broad, your expression can be more effective. Avoid the narrow ideas and use a balanced view, viewing everything in its totality.

For this, it is necessary to identify the various interrelated aspects inherent in the topic, and discuss them in a well-organized manner.

We all know, this is an age of the inter-disciplinary studies, where the various subjects/disciplines of learning are considered to be interrelated. It is similar to the syllabus of General Studies in which all the segments are interrelated.

An essay is 'the well planned and organised development of a specific topic which covers all its relevant aspects'.

To understand the various aspects of the essay topic and to develop it in an organised manner, the dimensions of essay's topic need to be explored. Some of the probable aspects can be as follows:

1. Social
2. Cultural/literary
3. Economic
4. Political/Administrative
5. Philosophical

6. Religious/Spiritual
7. Scientific/Technical
8. Historical
9. Geographical
10. Diplomatic
11. Demographic
12. Environmental/Ecological

By keeping the above list in your mind, you can develop the various aspects of the topic in an organised manner.

In addition, you must keep in mind the following points also:-

- (i) Try to understand all the possible aspects of various problems/issues.
- (ii) Welfare activities for the deprived classes is the main responsibility of 'a welfare state'. As an alert and responsible citizen, it is our moral duty to be sensitive towards them.

The list of marginalised or deprived classes can be as follows:

1. Scheduled Caste/Tribe (SC/ST);
2. Other Backward Classes (OBC);
3. Minorities;
4. Differently-abled Persons;
5. Women and Children;
6. Senior Citizens;
7. Marginal Farmers and Labourers of the Unorganised Sector;
8. Third Gender.

(iii) Further, there may be various aspects of development including:-

1. Education
2. Health
3. Employment
4. Agriculture
5. Rural development
6. Poverty eradication
7. Sanitation
8. Justice
9. Energy
10. Environment and bio-diversity conservation
11. Communication and transportation etc.

These tables may help you developing the content of your Essay and covering most of the aspects.

**(d) Totality and respecting other's view:** Try to look at the things in totality. The learning is multi-dimensional. Just focusing on one aspect of anything, and ignoring its other aspects, is not logical.

Respecting others' views ('Anekantavada' of Jainism) and perceiving the subject in its totality can make your essay extensive, balanced and multi-dimensional.

**(e) Introduction and conclusion:** There is no fixed formula for writing the introduction and conclusion. There are different ways and techniques for it, e.g., some aspirants begin the Essay with a saying/quotation, some begin with a story, some with the topic's background, while some begin with the basic facts of the topic. You can select from any of these techniques, or you can use some other technique.

After writing the introduction, develop the essay's topic and try to maintain a flow. Do not forget to write the conclusion in the end. There can be many ways of writing a conclusion. Mostly, we should try to present a very brief summary of the whole topic. Meanwhile, one should avoid taking an extreme view or a pessimistic conclusion. Try to write a balanced, positive and optimistic conclusion. A good conclusion should also be futuristic.

**(f) Writing style and presentation:** We observe that the 'taste of the food' and 'the way it has been served' are two completely different things. If the food is tasty and it is served in a nice way also, it looks like an icing on the cake. In the same way, if your ideas, facts and logics are good and effective, and you have also presented those ideas in an effective manner, it will impress the examiner for sure.

The Commission's guidelines do not clarify the presentation style much, though, it emphasises on a 'legible hand-writing'. In my view, if you keep the following points in mind, you can improve your style of presenting the ideas:

- (i) Write in small paragraphs. Generally, writing two to three paragraphs on a page of your answer sheet leaves a good impression on the examiner.
- (ii) grammatical errors leave a negative impact on the examiner. Therefore, try to avoid these language errors.
- (iii) Grammatical correctness does not mean 'use of a pure language'. It means that you should use simple vocabulary. You may use the technical terms/terminology also, only if it is required in the context. You must always keep in mind that the language used by you should not be mechanical or artificial, instead it should be simple and spontaneous.
- (iv) Many aspirants worry about their hand-writing. No doubt, a good hand writing beautifies your presentation, and leaves a positive impact on the examiner's mind. Thus, better write neatly and clearly. Readability should be maintained, so that the examiner does not face any difficulty while reading your essay.
- (v) You can underline the important points which you want to highlight.

**(g) Use of quotations:** Sometimes, the aspirants ask questions, like 'Whether one should use the dictums/statements/quotations or not, and 'which kind of quotations should be used'.

I feel, if the sayings or quotes of the learned persons/thinkers/philosophers are relevant to the topic, they can be used without hesitation. Quotes should be used according to the context and in a natural manner. It should not appear as if it is being imposed; rather it should suit the essay's topic. Try to maintain a flow. Avoid quoting the controversial statements and also avoid using too much of quotations.

**(h) Use of qualitative content:** Good and qualitative material always helps in improving the quality of your essay. Remember, never let the ideological narrowness or superficiality be reflected in your essay. For instance:

- (i) The ideas expressed in your writing should not reflect casteism, regionalism, communalism or any other kind of bias/discrimination.
- (ii) The philosophy of life and statements of many thinkers/personalities, like Aristotle, Socrates, Plato, Buddha, Mahavira, Guru Nanak, Kabir, Tulsi, Gandhi, Nehru, Tagore, Ambedkar, Vivekananda, Aurobindo, etc., may be quoted without any hesitation.

You may use the quotations of renowned Indian and Western scholars of history, language, literature, psychology, political science, sociology, science, technology, management, law, administration, etc., as per the need of the context.

The values and ideals of Indian Freedom Movement and the philosophy of Indian Constitution is our guide and inspiration. According to the context in your essay, you can take the references from the preamble of the Constitution of India, the fundamental duties, directive principles of the state-policy and the fundamental rights.

- (iii) It is better to take help of the facts and figures, wherever they are required for validating your views; but it should be done without affecting the flow of your essay.
- (iv) Merely criticising the government's policies can not be the solution of any problem. Actually, it is easy to pose a problem, but it is very difficult to offer a solution to that problem.

There is a famous statement by Shiv Khera "If we are not a part of the solution, then we are the problem in ourselves".

Hence, avoid the tendency of complaining about everything. Lapses and mistakes will always exist and there cannot be any perfection.

- (i) **Choosing the topic:** You can win half of the battle, if you select the right topic for the essay. If you select a right topic, then the probability of writing a good essay enhances. Therefore, while selecting the topic of an essay, try to keep the following points in mind:

(i) Select a topic, you are most familiar with. For example in my exam, I selected the topic, 'Is sting operation an invasion on privacy', because I had a decent understanding of this topic.

In the same way, you can select your topic from any field like; literature/philosophy/geography/science/culture, in which you feel more comfortable.

(ii) Give first preference to those topics in which you possess enough information and understanding and you have logics to validate your statements. Not only this, you should be confident also that you can write a good essay on this topic.

You are definitely lucky, if some topics in the exam paper are similar to the topics you have already prepared during the essay writing practice. I would suggest that you should prefer such topics.

(j) **What to do and what not:** In addition to all the above points, you should understand the following things also which can assure a better performance in the essay paper:

(i) The habit of studying and then thinking over it, makes your ideas more mature. It also increases your power of rational thinking.

Do develop and maintain the habit of reading, writing, discussing and thinking over. Do not limit the sources of knowledge; keep reading good books and magazines and learning new things.

(ii) There is no other substitute for writing practice. If you want to develop good writing skill, better practice writing essays weekly or fortnightly and get them evaluated by some senior so that you can improve your writing skill.

(iii) Group Discussion is a dynamic and participatory way of doing the preparations which makes our ideas rich and long lasting.

(iv) Knowledge is infinite like an ocean. Remember, we have tasted only a few drops of this ocean. Therefore, never behave like an 'empty vessel' which 'makes much noise', and never let your ego come in the process of learning. Socrates, the great philosopher, says, "The only true wisdom lies is in knowing you know nothing".

(v) Have full faith in yourself and your preparations and thoughts, instead of having overconfidence. If you practice Essay writing regularly, the quality of your essays will improve gradually. Then, you will be able to write a better essay in the examination.

(vi) Give special attention to proper division of time. It is compulsory to write both the essays in the paper. So, devote equal time to them. It does not matter, if you give more 5 to 10 minutes more to the first essay. Try to write the essays in the same sequence in which they have been asked in the paper.

(vii) Do not cross the word limit, as you will not get any credit for it.

(viii) Lastly, try to maintain the positive energy. You should not lose your hope at any cost, neither during the preparations nor in the examination hall.

*Abhishek Jain, IAS*

I have always felt that I am not very good at expressing myself when I write. Naturally, the thought of writing two essays in UPSC exam scared the hell out of me! However, I also knew that essay paper is crucial because of three reasons. First, it carries 250 marks! Second, the variation in marks among candidates in this paper is shockingly high and thus, this can become the reason for one being in or out of the holy list. Third, I believed that if I am able to improve my essay writing skills, then it will also make it easier for me to write General Studies answers. But, the question was what did I do? So let me summarize my strategy in the form of some Do's and Don'ts for your ease –

**Do's**

1. Firstly, you have to prepare for essay in a dedicated manner. It is often said that essay paper does not need any separate preparation. However, I feel that this is too big a risk to take! So, you need to keep out some time to prepare for essay writing.
2. Make notes! Yes I am right! I personally did not make lengthy notes for anything except essay. How did I do it? I scanned the UPSC essay question papers of last 20 years. If you do this, you will find out that there are certain key areas from which UPSC gives essay topics regularly. For e.g. – Women Related Issues, Education, Health, Climate Change, Fundamental Principles of Indian Philosophy, Corruption, etc. I noted down these topics and prepared detailed notes on each.
3. In my notes, I included every dimension of the topic – Economic, Political, Social, International, Security, Environmental, etc. Further, I also jotted down key statistics related to that issue as well as some good quotes which I can then use in my essays. All this might seem to be a herculean task, but, believe me, it will be worth it! This is because, the same notes will add to your answers in the GS papers as well thereby fetching you those “extra marks” that you really need to go ahead of other candidates.

4. Practice, practice and practice. Write a lot of essays on various topics and do get them evaluated to get external feedback.
5. In the exam, select a topic with which you are most comfortable with and have good content to deliver. Do not take extreme risk by going into unchartered territories as you might do more harm than good.
6. Use interesting and catchy introduction. I usually began my essays with some short stories which could be from Ramayana, Mahabharatha, World History or even my own creations. The intro should be such that it catches the attention of the examiner and makes her keen on reading the essay.
7. Ensure that everything you write in there is relevant to the topic. Please do not stray around.
8. Finally give a positive and optimistic conclusion to the essay. The conclusion should reflect your solution oriented as well as futuristic approach as an administrator.

### Don'ts

1. Don't start writing the essay without proper planning. Before writing, always give at least 10-15 minutes to plan out a schema of how you are going to organize the essay and what all areas are you going to touch. This will ensure that your essay is coherent and has proper flow.
2. Avoid making grammatical mistakes.
3. Do not consume your entire time in writing the first essay only. Many students end up with very less time for the second essay during the exam. Remember that both essays carry equal marks. So devote equal time to both.
4. Avoid political or religious biases or extremes. After all, you are going to be a civil servant who is bound by the conduct rules!
5. Do not unnecessarily use ornamental words. You do not need to be Shakespeare. Simple effective communication will do the work for you!

I hope that this write-up would be of some help to you. Trust yourself and practice hard. You will surely do wonders. Best of luck!

## QUOTES FOR ESSAY WRITING

### Corruption

*Righteousness is the foundation stone of peace and good governance.*

—Confucius

*Corruption is like a ball of snow. Once it sets rolling, it must increase.*

—Charles Colton

*Power tends to corrupts, and absolute power corrupts absolutely.*

—Lord Acton

*Power does not corrupt. Fear corrupts, perhaps the fear of a loss of power.*

—John Steinbeck

### Peace

*When the power of love overcomes the love of power, the world will know peace.*

—William Gladstone

*Peace and justice are two sides of the same coin.*

—Eisenhower

### Democracy

*I do not agree with what you have to say, but I'll defend to the death your right to say it.*

—Voltaire

*I understand democracy as something that gives the weak the same chance as the strong.*

—Mahatma Gandhi

*Pillars of democracy : 3D .i.e. Debate, Discuss and Dialogue*

*Revolutions are the locomotives of history.*

—Karl Marx

*From each according to his abilities to each according to his needs.*

—Karl Marx

*History repeats itself, first as tragedy, second as a farce.*

—Karl Marx

## Science vs. Religion

*All thinking men are atheists.*

—Ernest Hemingway

*Our scientific power has outrun our spiritual power. We have guided missiles and misguided men.*

—Martin Luther King

*Science without religion is lame and religion without science is blind.*

—Einstein

## Education

*Education is the most powerful weapon which you can use to change the world.*

—Nelson Mandela

*Literacy is a bridge from misery to hope.*

—Kofi Annan

*Live as if you were to die tomorrow. Learn as if you were to live forever.*

—Mahatma Gandhi

*Education is the manifestation of perfection already in man.*

—Swami Vivekananda

*An investment in knowledge pays the best interest.*

—Benjamin Franklin

*Success is walking from failure to failure with no loss of enthusiasm.*

—Winston Churchill

## Gender Equality/Women

*A gender-equal society would be one where the word 'gender' does not exist: where everyone can be themselves.*

—Gloria Steinem

*I measure the progress of a community by the degree of progress which women have achieved.*

—B.R Ambedkar

*Women are the largest untapped reservoir of talent in the world.*

—Hillary Clinton

*You educate a man, you educate a man. You educate a woman, you educate a generation.*

—Brigham Young

*No one cares how much you know, until they know how much you care.*

—Theodore Roosevelt

*Whatever is begun in anger, ends in shame.*

—Benjamin Franklin

*If you want something said, as a man; if you want something done, as a woman.*

—Margaret Thatcher

## Poverty

*Poverty is like a punishment for a crime you didn't commit.*

—Eli Khamarov

*Best way to help poor is not to be one of them.*

—Carnegie Mellon

*Poverty is the worst form of violence.*

—Mahatma Gandhi

## Health

*It is the health that is real wealth and not pieces of gold and silver.*

—Mahatma Gandhi

## Environment and Climate Change

*What we are doing to the forest of the world is but a mirror reflection of what we are doing to ourselves and to one another.*

—Mahatma Gandhi

*We do not inherit the earth from our ancestors, we borrow it from our children.*

—David Brower

*There are no passengers on spaceship earth. We are all crew.*

—Marshall McLuhan

*There is a sufficiency in the world for man's need but not for man's greed.*

—Mohandas K. Gandhi

*In an underdeveloped country, don't drink the water; in a developed country, don't breathe the air.*

—Jonathan Raban

*We're in a giant car heading towards a brick wall and everyone's arguing over where they're going to sit.*

—David Suzuki

## Ethics

*Happiness is when what you think, what you say, and what you do, are in a harmony.*

—Mahatma Gandhi

*We must become the change we want to see.*

—Mahatma Gandhi

*An eye for an eye only ends up making the whole world blind.*

—Mahatma Gandhi

*Peace is its own reward.*

—Mahatma Gandhi

*The mind is everything. What you think, you become.*

—Buddha

*May your choices reflect your hopes, not your fears.*

—Nelson Mandela

*Nearly all men can stand adversity, but if you want to test a man's character, give him power.*

—Abraham Lincoln

*Injustice anywhere is a threat to justice everywhere.*

—Martin Luther King JR

*Greed has poisoned men's souls.*

—Charlie Chaplin

*The best test of a man is authority.*

—Anonymous

*I fear the day when technology will suppress human interaction and the world will have a generation of idiots.*

—Albert Einstein

## Science and Technology

*I fear the day when technology will suppress human interaction and the world will have a generation of idiots.*

—Albert Einstein

*Social media is reducing social barriers. It connects people on the strength of human values, not identities.*

—Narendra Modi

*The internet is becoming the town square for the global village of tomorrow.*

—Bill Gates

*Human spirit must prevail over technology.*

—Albert Einstein

*The real danger is not computers will begin to think like men, but that man will begin to think like computers.*

—Sydney Harris

## Agriculture

*If agriculture fails, everything else will fail.*

—M.S. Swaminathan

## Children

*If we have to bring real peace in the world, we must begin with children.*

*Child is the father of man.*

—Mahatma Gandhi

*It's the greatest poverty to decide that a child must die so that you may live as you wish.*

*Small hands can handle a pen better. Lend your support to abolish child Labour.*

—Mother Teresa

## Public Participation

*The ballot is stronger than the bullet.*

*Democracy is the road to socialism.*

—Abraham Lincoln

*The education of a man is never completed until he dies.*

—Karl Marx

*Education begins in womb and ends in tomb.*

—Robert E. Lee

*If you think in terms of a year, plant a seed; if in terms of ten years, plant trees; if in term of 100 years, teach the people. (importance of human capital)*

*The illiterate of the twenty first century will not be those who do not read or write but those who do not learn, re-learn and un-learn.*

—Confucius

*If the ability of a fish was measured by its ability to climb a tree, then fish would have lived its whole life believing that it is stupid.*

—Alvin Toffler

## Emotional Intelligence

*A leader is a dealer in hope.*

—Albert Einstein

## Media

*Whoever controls the media, controls the mind*

—Jim Morrison

*The man who reads nothing at all is better educated than the man who reads nothing but newspapers*

—Thomas Jefferson

## Development

*An honest man's the noblest work of God.*

—Alexander Pope

*No legacy is so rich as honesty.*

—William Shakespeare

*You cannot have peace without security and you cannot have security without inclusive development.*

—Kofi Annan

## Honesty

*Honesty is the first chapter of the book of wisdom.*

—Thomas Jefferson

*Honesty is the best policy when there is money in it.*

—Mark Twain

## Integrity

*If you tell the truth, you don't have to remember anything.*

—Mark Twain

*A lie can travel half way around the world while the truth is putting on its shoes.*

—Mark Twain

*The truth is rarely pure and never simple.*

—Oscar Wilde Truth

*Men build too many walls and not enough bridges.*

—Joseph Fort Newton

## Compassion

*Knowing yourself is the beginning of all wisdom.*

—Aristotle

*The only true wisdom is in knowing you know nothing.*

—Socrates

## Courage

*Courage is grace under pressure.*

—Ernest Hemingway

*If you are not willing to risk the usual, you will have to settle for the ordinary.*

—Jim Rohn

*Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning.*

—Albert Einstein

Take up one idea. Make that one idea your life -- think of it, dream of it, live on that idea. Let the brain, muscles, nerves, every part of your body be full of that idea, and just leave every other idea alone. This is the way to success.

—Swami Vivekananda

Sometimes you can't see yourself clearly until you see yourself through the eyes of others.

—Ellen DeGeneres

All our dreams can come true if we have the courage to pursue them.

—Walt Disney

## Miscellaneous

It does not matter how slowly you go, so long as you do not stop.

—Confucius

Someone is sitting in the shade today because someone planted a tree a long time ago.

—Warren Buffett

Don't cry because it's over. Smile because it happened.

—Dr. Seuss

You only live once, but if you do it right, once is enough.

—Mae West

Opportunities don't happen. You create them.

—Chris Grosser

Once you choose hope, anything's possible.

—Christopher Reeve

Try not to become a person of success, but rather try to become a person of value.

—Albert Einstein

There is no easy walk to freedom anywhere, and many of us will have to pass through the valley of the shadow of death again and again before we reach the mountain tops of our desires.

—Nelson Mandela

It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.

—Charles Darwin

The best and most beautiful things in the world cannot be seen or even touched – they must be felt with the heart.

—Helen Keller

Great minds discuss ideas; average minds discuss events; small minds discuss people.

—Eleanor Roosevelt

The best revenge is massive success.

—Frank Sinatra

*The difference between winning and losing is most often not quitting.*

—Walt Disney

*I have not failed. I've just found 10,000 ways that won't work.*

—Thomas Edison

*A successful man is one who can lay a firm foundation with the bricks others have thrown at him.*

—David Brinkley

*No one can make you feel inferior without your consent.*

—Eleanor Roosevelt

*The whole secret of a successful life is to find out what is one's destiny to do, and then do it.*

—Henry Ford

*You miss 100 percent of the shots you don't take.*

—Wayne Gretzky

*The way I see it, if you want the rainbow, you gotta put up with the rain.*

—Dolly Parton

*You can't please everyone, and you can't make everyone like you.*

—Katie Couric

*There are two types of people who will tell you that you cannot make a difference in this world: those who are afraid to try and those who are afraid you will succeed.*

—Ray Goforth

*Start where you are. Use what you have. Do what you can.*

—Arthur Ashe

*The two most important days in your life are the day you are born and the day you find out why.*

—Mark Twain

*All progress takes place outside the comfort zone.*

—Michael John Bobak

*We become what we think about most of the time, and that's the strangest secret.*

—Earl Nightingale

*Do one thing every day that scares you.*

—Eleanor Roosevelt

*The only place where success comes before work is in the dictionary.*

—Vidal Sassoon

*Nothing great was ever achieved without enthusiasm.*

—Ralph Waldo Emerson

*Twenty years from now you will be more disappointed by the things that you didn't do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbor.*

*Catch the trade winds in your sails. Explore. Dream. Discover.*

*Keep your face to the sunshine and you can never see the shadow.*

—Mark Twain

*If you always do what interests you, at least one person is pleased.*

—Helen Keller

*If you want to make a permanent change, stop focusing on the size of your problems and start focusing on the size of you!*

—Katharine Hepburn

*Success does not consist in never making mistakes but in never making the same one a second time.*

—T Harv Eker

*Be yourself. Everyone else is already taken.*

—George Bernard Shaw

*Non-violence is A Weapon of the Strong.*

—Oscar Wilde

*An Eye for an Eye will only make the Whole World Blind.*

*Non-Violence requires a Double Faith, Faith in God and also Faith in Man.*

*Whenever you are confronted with an Opponent, Conquer him with Love.*

—Gandhiji

## DIMENSIONS FOR ESSAY WRITING

### LOVE

#### Possible Dimensions:

1. Retributive justice vs. reformative justice.
2. SC mandating the use of death penalty in the rarest of rare cases.
3. Dealing with radicalisation, xenophobia, communalism, extremists, separatists - use of strictest crackdowns (justified all the time?? Are there adverse effects of AFSPA, Public Safety Act?).
4. Persuasion and behavioural change for sustained peace - e.g. ending untouchability and caste discrimination, gender discrimination (in the long run).
5. Addressing inequality cannot be through Maoist thought but by progressive expenditure and regressive taxation.
6. Democratic transfer of power vs. French revolution type transfer (which can bring sustained peace??)
7. Spirit of tolerance for differing cultures vs. subjugation of one culture by another (real or perceived and neglected) (example. partition of Pakistan 1971, Sri Lankan Civil War, Issue of Catalonia, Demand for Gorkhaland in India).
8. Diplomacy vs. wars to end wars (American misadventures in Vietnam, Afghanistan, Middle East).

9. Anthropocentric view of environment and ecology - altering species that are dangerous for humans (mosquitoes so that they become extinct) for short term human benefit without understanding their wholesome role in ecosystem, damming and interlinking rivers without proper understanding and rehabilitation of its after effects.

## Do we, in the course of our lives, light lamps, or do we snuf out the lamps or candles that exist?

Purpose: GS1, GS2, GS3, GS4 and Essay

1. Work ethic and diligence.
2. Education pedagogy - encouraging curiosity or curbing it.
3. Ethics in public relations, public service, personal relations.
4. Humility in public service - not self promotion.
5. Governance - outcomes more important than procedures ... does it help the needy?
6. Culture and tradition - civilizational values vs. obscurantism, orthodoxy.
7. Compensatory afforestation as a replacement for forests - does it really help the environment.
8. Idea of justice - social, economic and political.
9. Criminal justice system - retributive or reformative.
10. Politics - field of ideas fulfilled by gaining power or power for the sake of power.
11. Democracy - majoritarian or empowering the last person in line???
12. State - welfare state of equity or laissez faire of competition and inequality.
13. News media - as a means of education and public service or as a way of political partisanship (paid media).
14. Social media - a pillar of democracy or as a way of rumour mongering and a way to boost egos and conceit.
15. RTI - means of transparency or a way of harassing honest bureaucrats.
16. Judicial activism vs. judicial overreach.
17. Extremism, fundamentalism in the name of religion and secularism.
18. Lynchings in the name of nationalism and patriotism deterring dissent and free speech.
19. Globalisation and its ill-effects on the marginalised - women, children (forced labour or underpaid labour), tribals (biopiracy and loss of tribal knowledge), seniors citizens (loneliness as children go away).
20. Wars for peace.

## Nations without vision will perish

Purpose: GS1, GS2, GS3, GS4 and Essay.

1. For dreams kind of essay and answers.
2. Policy-making to be broad-based and policy makers should be visionary.
3. Society - values of inclusion, peace and brotherhood to be incorporated in the vision for tolerance to be the norm as seen in fundamental duties and preamble.
4. Constitution makers' vision incorporated in the preamble.
5. Politics - a field of ideas to realise the vision of political parties incorporated in the manifesto.
6. Leadership of a movement has to have a vision for change and course correction to make democracy vibrant (example RTI, Jan Lokpal Act).
7. Vision for sustainable development (Rig Veda, Gandhiji's idea of need vs. greed).
8. India's vision of Vasudhaiva Kutumbakam guided our policy of non-alignment and gave us a unique place in global arena.
9. Economic vision - faster, sustainable, inclusive equitable economic growth incorporated in the budget.
10. Every culture has a vision for the civilization it comes from and helps sustain and develop the social capital in the civilization.
11. Productive and regulated use of technology (social media, AI, BD, AR, VR) possible only with individual, organisations, society, nations and world community has a vision.

## Good governance depends on ability to take responsibility by both administration as well as people

Purpose: GS1, GS2, GS3, GS4 and Essay

1. Citizen centric governance.
2. Idea of fundamental duties for citizens and DPSPs for government leading to good governance overall.
3. Responsibility of citizens to vote and not go by money power or muscle power or cult of personality or casteist, sexist criteria.
4. Social audit - to be done by the people actively and facilitated by the bureaucracy responsibly.
5. Implementation of citizens charter by the bureaucracy in letter and spirit and demand of the same by an active citizenry.
6. Constitution's success will depend on the people implementing it.
7. Results of government schemes depends on the administration implementing them and citizens' participation (e.g. give it up).

8. Collusive corruption can be stopped only by combined effort of both administration and the people.
9. Coercive corruption can be contained by ethical bureaucracy and aware citizenry who can use PoCA (report after giving bribe).
10. Role of media (and civil society as large) as a pillar of democracy to keep government and bureaucracy at its toes by using RTI.
11. Role of media to bring to fore issues of marginalised (e.g. movies like Traffic Signal, Pink, etc.) and change narrative in society leading to putting pressure on government.
12. Role of media to report positive outcome of government initiative to people dispelling a cynical attitude that society holds by and large.
13. Responsibility of people to not spread rumours and forward fake news to prevent rumour mongering and prevent adverse law and order situations like riots and lynchings.
14. Role of SHGs and NGOs as partners in implementation of government schemes and as on-field partners of government.
15. Public discussion of proposed legislation and rules e.g. net neutrality.
16. Participation in mohalla sabhas to provide feedback to the government.
17. Paying taxes.
18. Role of society to not normalise corruption with a 'chalta hai attitude' and bring a 'badal sakta hai' attitude.
19. Affirmative action - government taking responsibility for the marginalised.
20. Indian version of secularism - government taking responsibility for the suppressed.
21. PIL and judicial activism - judiciary taking pro-active responsibility for the neglected.
22. Pre-LPG vs. Post-LPG - government changing roles realising responsibility varies as a provider (pre-LPG) and a regulator and facilitator (post-LPG).
23. Voluntary disclosures mandated under RTI as responsibility of government.
24. Peoples police not politician's police and community policing.

## **To give pleasure to a single heart by a single act is better than a thousand heads bowing in prayer**

Purpose: GS1, GS2, GS3, GS4 and Essay

1. Service of the weakest is the true service to God.
2. Religion has no value if it cannot better your society and help the poor, depressed and disadvantaged; pitfalls of orthodoxy.

3. Social reform - with or without vedas, Gandhiji said ignore vedas if the sanction of untouchability.
4. Compassionate society from morals as against communalism, xenophobia, caste and untouchability in the name of religion.
5. Politics - cult of personality, money and muscle power vs. politics of ideas that bring happiness to people.
6. Trusteeship rather than having an army of servants for ego boosting.
7. Environmental - Frugal and minimalist lifestyle better than consumerist lifestyle of buying stuff as status symbol.
8. Redistributive justice vs. inequality caused by accumulation of wealth by a few just for pride, greed and vanity.
9. Connecting and helping friends and family on a personal basis rather than likes, shares and follower culture of social media (mostly strangers).

## Whoever controls the media, controls the mind

Purpose: GS1, GS2, GS3, GS4 and Essay

1. Article 19(1)(a) and freedom of speech and how it is subtly manipulated.
2. Fake news - penetration of all stratas of media and resultant crimes like lynchings.
3. Effects on democracy - Cambridge analytica US elections of 2016.
4. Opinion polls and strategic voting.
5. PR teams maintained by most political parties.
6. Paid media.
7. Self control and regulation of media ... Why??
8. Right to information and its use by the news media.
9. Soft power and use of media to promote it (display of western culture in Indian media and movies – tribal and traditional culture of India).
10. Use of media for ICE campaigns.
11. Neglect of certain sections of society by media and poor discourse in society as such - PwDs, Dalits, Transgenders, Senior Citizens vs. intense coverage of mainstream sections (bollywood and sports stars).
12. Perception of government, politicians and bureaucracy in society despite several honest and well meaning officers and politicians.
13. Advertisement campaigns feeding consumerism... making you buy stuff you do not need with money you don't have.
14. Gender stereotypes being promoted in advertisements.
15. Crimes inspired by movies - Bunty aur Bubly, glorification of stalking as in Raanjhanaa, glorification of smoking (under some control now).

16. Movies that talk of social issues - bringing neglected issues to attention of society e.g. PINK (LGBTQ issue), Lipstick under my burkha, trapped (lonely life in metropolitans), Citylights (inequality).
17. Glorification of Vietnam war in US hiding the human rights violations and tragedies (e.g. movies like When we were Young)
18. Control of media in China and USSR (murder, imprisonment of journalists).

**True compassion means not only feeling another's pain but also being moved to help relieve it**

Purpose: GS1, GS2, GS3, GS4 and Essay

1. Definition of compassion.
2. Welfare state as seen in Indian constitutional ideals of justice, equality.
3. Protection of rights of minorities in a democracy which at a bare-bone level works by the logic of majority.
4. Welfare of animals laws like Prevention of Cruelty to Animals Act.
5. Gandhiji's Talisman.
6. Citizen Centric governance.
7. Citizens charter and social audit.
8. Right to Service Delivery Act.
9. Spirit of CSR and social service.
10. Idea of vasudhaiva kutumbakam - Gujarati doctrine, Global welfare organisations like WFP, Doctors without borders, etc.
11. Idea of progressive taxation.
12. Gandhian idea of trusteeship and sarvodaya.
13. Assistance to the marginalised sections of society - women, senior citizens, children, differently-abled, etc.
14. Jain ideals of ahimsa and parasparopagraho Jīvānām.
15. Vedic tradition of living in harmony with all life forms to WHO's modern concept of one health.

**An ideal society should be mobile, should be full of channels for conveying a change taking place in one part to other parts**

Purpose: GS1, GS2, GS3, GS4 and Essay

1. Migration - rural to rural, rural to urban, urban to urban and international for business, studies, marriage, etc.
2. Changing values of a society and society being tolerant to new values e.g. Section 377.

3. Political education of masses to graduate from a representative to participatory to as much direct democracy.
4. Penetrating start-up culture in the country, acceptance in society that it is okay to fail and learn.
5. Vocal for local and local for global-making indigenous methods, innovation as well as local solutions across the country recognised nationally and globally adapted.
6. Secularism - acceptance and celebration of different cultures and building a composite culture by learning from best in every way of life.
7. Social capital.
8. Collective action for common problems of all so that the energy of the masses can be leveraged by jan bhagidari model leverage by IEC of masses.
9. Role of society in adapting to changing needs of time and inculcating new values to children.
10. Public morality to evolve to meet the goals of constitutional morality and if need be vice versa via (amendments).
11. Development of technology and its effect on human geography and society, society to collectively ponder on its effects and ensure that adverse effects are nullified, mitigated or adapted to in an inclusive and progressive manner.
12. Evolving definition of social contract and laws to be framed and amended keeping mind newer challenges posed by changing values, lifestyles, cultures, technology, etc.
13. Faster, more sustainable and inclusive growth but not decimate of indigenous cultures - tribal panchsheel.
14. New models of cities - rural, urban, metropolitan, 15 minute city (Melbourne targeting the idea) and ways to ensure that social interactions and liveability is ensured.
15. New models of family - joint to nuclear to live-in-relations but ensuring as they penetrate the society interests of all are ensured (especially women, senior citizens).
16. New types of jobs in economy - gig economy penetrating across classes but ensuring those employed have social security too.

**Schooling confuses teaching with learning, Grade Advancement with Education, a Diploma with Competence and Fluency with the ability to say something new**

Purpose: GS1, GS2, GS3, GS4 and Essay

1. Commercialization of education.
2. Difference between literacy and education - development of knowledge vs. character.

3. Role of family, society, peers to inculcate values, civic sense.
4. Nai taleem of Gandhiji.
5. Rote learning, marks rewarded for reproducing what is taught not understanding why? Less emphasis on the intellectual and spiritual role of education in Indian education system.
6. Mismatch between curricula and industry's needs.
7. Educated practicing patriarchy and caste system.
8. Flaws in Indian R&D system which lets plagiarism happen.
9. Continuing learning not emphasised in our education system.
10. Low value given to research vis-à-vis package.
11. Start-ups being seen as undesirable endeavours by parents and failure of them seen as taboo in society.
12. Disagreeing with teacher is seen as being rude but education should teach dissent.
13. Schooling promoting materialism.
14. Need for adaptive learning, knowledge creation by children and learning by doing for children.
15. Education to instil constitutional morality into pupil, role of education to inculcate values of public service, sympathy, empathy, compassion, integrity, honesty, tolerance, justice, truthfulness, love caring, humanitarianism, trusteeship, social unity, altruism, equity, redistribution, benevolence, philanthropy and in the students.
16. Aware and mature electorate through political education of masses - not go for vote bank politics.
17. No detention policy and its flaws; need for CCE, AAAC along with NDP.

**At his best, man is noblest of all animals; separated from law and justice, he is the worst - Aristotle**

Purpose: GS1, GS2, GS3, GS4 and Essay

1. Dictatorship (arbitrary use of power) vs. representative democracy (peaceful transition of power) vs. direct democracy
2. Rules banning the use of chemical, biological weapons and war crimes vs. peaceful settlement of disputes via negotiations.
3. Desecration of environment caused by materialism vs. environmental conventions to protect it like UNFCCC, CCD, CBD vs. tribal cultures of animism and sacred grooves.
4. Data privacy - pre and after EU GDPR.

5. Outer space treaty vs. space race.
6. Taxation laws - avoidance need for adaptation of laws to avoid BEPS vs. progressive taxation vs. bali in ancient egalitarian society.
7. Reform of election laws to face challenges of social media, paid media, money and muscle power vs. direct democracy.
8. Laws to control anti-competitive practices e.g. CCI in India, EU's fines on google, antiprofiteering authority of GST.
9. Nuclear umbrella, nuclear race vs. new NPT.
10. Gujarat doctrine and Panchsheel vs. debt trap diplomacy by China (absence of legal framework to control neo-colonialism).
11. Indian secularism with right of government to intervene for social welfare, ancient varna system vs. obscurantism and caste system.

### **Not let dignity be the domain of the few and injustice the everyday of the many**

Purpose: GS1, GS2, GS3, GS4 and Essay

1. Compassionate society.
2. Social justice - minorities, untouchability, inequality, gated communities, ghettos, slums, homeless on roads, beggars, PWDs, oldies and destitute.
3. Fraternity, brotherhood and inclusive society.
4. Right based approach.
5. Inalienable human rights for all.
6. Food security for antyodaya.
7. Article 21.
8. Reducing inequality.
9. Climate justice and associated deprivations to poor and LDCs.
10. Universal Basic Income.
11. Client patron attitude of bureaucracy.
12. Role of society in instilling values in children.

**Abraham Lincoln - nearly all men can stand adversity, but if you want to test a man's character, give him power**

**The essence of government is power, and power, lodged as it must be in human hands, will ever be liable to abuse**

**Lord Acton - Power tends to corrupt and absolute power corrupts absolutely**

**Edmund Burke - The greater the power, the more dangerous the abuse**

## **Edmund Burke - Power gradually extirpates for the mind every humane and gentle virtue**

Purpose: GS1, GS2, GS3, GS4 and Essay.

1. Need for democracy and failing of dictatorship.
2. Rise of caste system by asymmetric distribution of power among various varnas.
3. Power distribution in families and rise of patriarchy.
4. Humility in success and equanimity.
5. Loss of humility in civil servants and politicians - sometimes due to enormity of what they do.
6. Abuse of power in society by dominant sections.
7. Majoritarianism in democracies.
8. Subjugation of minorities - social, cultural, linguistic.
9. Cult of personality in politics and eventual dictatorship.
10. Capitalism (power to upper classes) => imperialism, colonialism and militarism.
11. Colonial mentality and client patron relationship.
12. Destruction of environment (flora and fauna) by the most intelligent animal.
13. Discretion (power) - transparency - accountability = Corruption.
14. Climate injustice by first world.
15. Neo-colonialism.
16. Change of Chinese stance since Deng Xiaoping (hide capabilities, bide time and never claim leadership) to Xi Jinping (claim at cost of other's right and global laws) - Belt and Road of China, South China Sea.
17. Gandhiji said political power is like crown of thorns, not as an asset, discharged with nishkam and detached way not getting enticed.
18. Alleged abuse of laws – AFSPA, UAPA, Public Safety Act, National Security Act, EIA, LARR, FRA.

## **Rivers do not drink their waters themselves, nor do trees eat their fruit, nor do the clouds eat the grains raised by them. The wealth of the noble is used solely for the benefit of others**

Purpose: GS1, GS2, GS3, GS4 and Essay.

1. Jack Ma - When you are a billionaire, it is the trust of the society, it is the society's money... not your own.
2. Benevolence, generosity, charity, trusteeship.
3. Educated should help others.
4. Each one teach one.

5. Wealth can be any asset, skill, gift, talent - use it for greater good.
6. Socio-economic justice.
7. Corporate social responsibility.
8. Progressive taxation regressive expenditure in a welfare state.
9. Gandhiji's talisman.
10. Detached possession and nishkam karma.

### **One has to carry people with one - Pandit Nehru**

1. Financial Inclusion.
2. Inclusive growth and development.
3. Poverty alleviation (poverty anywhere is a threat to prosperity everywhere).
4. Balanced regional development in a country or it will lead to separatism.
5. Protection and development of marginalised and minorities (else communalism and partition).
6. Consensus building and public discussion under EIA, LARR Acts.
7. Negotiations - insurgency, militancy, alienation of minorities, tribals @ LWEs.
8. NGOs and civil society.
9. Participatory democracy and universal adult franchise.
10. Progressive taxation and regressive expenditure.
11. Transparency and accountability.
12. Each on teach one.
13. Public participation in government initiatives - jan andolan.
14. Utilitarianism.
15. Social justice and equitable access to all to public goods.
16. Justice done and seen as done.
17. Tribal Panchsheel.
18. Vasudhaiva Kutumbakam.

### **The only real victory was one in which all were equally victorious and there was defeat for no one**

Purpose: GS1, GS2, GS3, GS4 and Essay.

1. Negotiations - Diplomacy is not a zero sum game.
2. Consensus building in case studies.
3. Behavioural change by suasion not force.
4. Tolerance, accommodation, resilience of peace thus obtained.
5. Diverse pluralistic society, devoid of extremism and fundamentalism.

6. Dignity of all not a few.
7. Middle path - golden mean.
8. Social justice by compromise - Gandhiji wanted to persuade the sanatanis and not overpower or subjugate them.
9. Inclusive politics while allaying the fear of minorities with pandering or appeasement.
10. Neither capitalism nor communism but democratic socialism.
11. Balance achieved in land acquisition in LARR and between environment protection and unavoidable degradation in CAMPA Act.
12. Mosaic of cultures - unity in diversity that is India.
13. Tribal development as per their own genius rather than 'modern' culture being forced on them.
14. Redistributive justice - progressive taxation and regressive expenditure.
15. Affirmative action.

### **Nations that forget history are bound to lose the power to create it**

Purpose: GS1, GS2, GS3, GS4 and Essay.

1. Institutional memory in bureaucracies.
2. Intergenerational transmission of knowledge in cultures, traditions, lawmaking.
3. Value of precedents in criminal justice system.
4. Life is too short to learn from own mistakes.
5. Tribal knowledge - Traditional Knowledge Digital Library and biopiracy, AYUSH.
6. Vedic maths.
7. International relations and historical precedents - learnings from World War.
8. Deterioration of society from vedic age to later and then post-vedic age to age of Mahajanapadas to Gupta and Medieval Age leading to dark ages of superstition and being colonised.
9. Neocolonialism.
10. Traditional values and declining morals of society and challenges associated with mindless copying of the west.
11. Resorting to personality cult in politics for winning elections and deterioration of democracies to autocracies.
12. Forgetting vedic wisdom of worshiping environment and its consequences (e.g. sacred grooves).
13. Sanskrit being forgotten in India and being researched in NASA.

14. Soft power of history and culture being left unutilized - e.g. Yoga.
15. History of syncretic culture being degraded to communalism leading to civil wars, violence (Kashmiri Pandit issue) and partition (India, Pakistan) - people suffering, opportunity for prosperity being missed.
16. Traditional cures for modern diseases e.g. Turmeric (Curcumin) for cancer ... being researched.

**Earth provides enough to satisfy every man's needs, but not every man's greed.**

**Distinguish between real needs and artificial wants and control the latter**

Possible uses: GS1, GS2, GS3, GS4 and Essay

1. Sustainable development, expanding ecological footprint and earth overshoot day.
2. Intergenerational equity, balanced use of resources to counter inequality.
3. Climate justice.
4. Trusteeship.
5. Economic reasons of middle class as a base of communalism.
6. Quest for dominance and hegemony as root of international conflict, unilateral aggression (South China Sea, American lifestyle and war instigated in quest of oil, etc.).
7. Consumerism vs. Minimalism.
8. Conscience as a guide to see salvation and spiritual upliftment does not lay in materialism.
9. Temperance as a virtue.
10. Detached possession to achieve goal of justice, peace, social well-being.

**Gandhiji - If I have the belief that I can do it, I shall surely acquire the capacity to do it even if I may not have it at the beginning.**

**Rabindranath Tagore - Everything comes to us that belongs to us if we create the capacity to receive it.**

**A.P.J. Abdul Kalam - You can't cross the sea merely by standing and staring at the water.**

**F.A.I.L. means "first attempt in learning"; E.N.D. means "effort never dies"; N.O. means "next opportunity".**

**If you want to shine like a sun, First burn like the sun.**

**Without your involvement you can't succeed. With your involvement you can't fail.**

**Man needs difficulties in life because they are necessary to enjoy the success.**

**All of us do not have equal talent. But , all of us have an equal opportunity to develop our talents.**

**Swami Vivekananda - arise, awake, and stop not till the goal is reached.**

1. Initiative and solution to collective action problem - Corruption, Cleanliness, Health, Education And Demographic Dividend.
2. Vision, progressive building, positivity, hope, optimism.
3. Equanimity in the face of troubles - determination, perseverance, will power.
4. R&D.
5. Reform - Social, economic and political justice is needed to realise that - example affirmative action, scholarships, subsidy.
6. Case studies for motivating someone demotivated.

### **Bad Laws are the Worst Sort of Tyranny**

Relevance: GS1, GS2, GS3, GS4 and Essay

1. Procedure established by the law and due process of law.
2. Hasty laws leading to extreme actions by executive
3. Emphasis of not rushing legislation.
4. Colonial laws like Rowlatt Act, Section 124A before Kedar Nath case, AFSPA before SC guidelines.
5. Institutionalization of injustice.
6. Extreme justice => injustice.
7. Capital Punishment.
8. Section 66A of IT Act (struck down by SC of India).
9. Aadhaar Act - provisions struck down.
10. Public consultation in law making.
11. Referring Bills to the Standing Committees.
12. Judicial review.
13. Participatory democracy - initiative where people can initiate legislation.

**The purpose of a government is to make it easy for people to do good and difficult to do evil - Gladstone**

1. Deterrent role of law - power of state to use violence for the greater good, power vested in governments under social contract - Institutions and government structures to provide stable life.
2. Citizen centric governance.
3. Deter corruption not create gray areas to promote it!
4. Labour laws - Licence, permit, quota and inspectors - for pro-poor inclusive growth not rent seeking or regulatory cholesterol.
5. Ease of doing business.
6. Electoral reforms to increase honest voting in elections.
7. Laws and constitutional provisions for social justice - Indian definition of secularism.
8. EIA, SIA provisions in LARR; Laws like Forest Rights Act.
9. Citizen Charter.
10. RTI.
11. Social Audit Laws.
12. Right to service laws.
13. Grievance redressal mechanism.
14. Ethical governance, 8 pillars of good governance.
15. Efficiency of judiciary - cost of delays.
16. Reduce the incentive for tax evasion and increase the cost.
17. Policy implementation - for the good of the people and not harm them despite good intentions - Aadhaar and exclusion due to fingerprints being unreadable.

**Have faith in humanity. Humanity is like an ocean; if a few drops of the ocean are dirty, the whole ocean doesn't become dirty**

Possible Uses: GS1, GS2, GS3, GS4 and Essay

1. Foundation of social contract - base of human existence and society - sense of good and conscience distinguishes us from the wild animals.
2. Role of society in imparting values, society as a teacher.
3. Positive ending for answers about society, humanity for emphasizing virtuous nature of human beings.
4. Reverse of collective action problem - motivation for social service - be the change.

5. Bringing about change in people by information, communication and education campaigns - people behave properly once they understand the need for it.
6. Working of democracy - masses rejecting unfit leaders as a whole.
7. Countless examples of people from different communities helping each other even during riots.
8. Good Samaritans - take an example from them.
9. Sensitisation for social change and not force - as emphasised by Gandhiji - since he believed in inherent goodness of all.
10. Non-violence for changing the behaviour of adversary.
11. Criminal justice system - even though some might be given capital punishment rarest of rare - but the design overall is reformative.
12. Systems like plea bargaining and community service as punishment to get offending people to do good for society in turn bring out the humanity in them.

### **To be outspoken is easy when you do not wait to speak the complete truth**

Relevance: GS1, GS2, GS3, GS4 and Essay

1. Not bowing to peer pressure, going by the promptings of ones own conscience.
2. Not bowing to patriarchal injustice.
3. Claiming the right for social justice in the face of debilitating norms - e.g. Rosa Parks (African American) did not give up her seat on the bus for white man, Mahatma Gandhi's movement against racism in South Africa.
4. Rise of right wing extremism, fundamentalism and xenophobia.
5. Value of every single vote in a democracy.
6. When there is corruption in institution and you are alone (e.g. for case studies regarding nepotism in appointments).
7. No excuse for not acting honestly (a pusillanimous civil servant abets corruption at the behest of political boss, even though he may be honest himself).
8. Public participation in procedures like EIA, SIA.
9. Yellow journalism and paid media.
10. Independent directors failing in their roles.
11. (Alleged) Biased behaviour by institutions - Election Commission, Judiciary, League of Nations, WHO and other UN bodies.
12. Countries siding with one or the other superpower despite the ill-effects of Cold wars - e.g. global arms race, countries being used as props to show supremacy of either powers.

13. Speaking truth to power (DIG D. Roopa when she was posted as prison in-charge where V.K. Sasikala was jailed).

### **Know thy self, know thy enemy. A thousand battles, a thousand victories**

Possible uses: GS1, GS2, GS3, GS4 and Essay.

1. Evidence based policy making.
2. Planning, strategising.
3. SWOT analysis.
4. Iterative improvement in laws and policy as seen in GST.
5. Managing the process of urbanisation rather than getting trapped in rigid master plans.
6. Public discussions, putting draft bills on website, transparency - know thyself.
7. International data sharing - know thy enemy better in security issues.
8. Intelligence regarding terror.
9. Power of introspection and constructive criticism.
10. Flaws of our society and reform by consensus.
11. Reform of government work culture in India - openness and colonial mentality.
12. Need for a proper census.

### **We have just enough religion to make us hate, but not enough to make us love one another**

Relevance: GS1, GS2, Essay and Interview

1. Radicalisation based on religion; misinterpretation based on jihad.
2. Cow vigilante violence - where were these when cows were being washed away in floods.
3. Communal violence - true reason for communalism is economic inequality and not religion.
4. Sectarian conflict@ middle east
5. Extremism, fundamentalism and nationalism of the bad kind.
6. Caste orthodoxy, dalit marginalisation, khap panchayats.
7. Vote bank politics.
8. Rohingya issue.
9. Sri Lanka - Tamil and Sinhala - based on language ... religion can be replaced with culture and linguistic protests against impositions - gorkhaland, Karnataka, TN.
10. Misinterpretation of religious values - peace and love for all lifeforms is the base of all religions.
12. Truth and non-violence as the base of all religion.

## Enacting of a law but tolerating its infringement is worse than not enacting a law at all

Possible Uses: GS1, GS2, GS3, GS4, Essay and Interview

1. Law enforcement - justice delayed = tolerating its infringement.
2. Fundamental rights - speech, religion, equality; SC, STs - Prevention of Atrocities Act, Protection of Civil Rights Act, Manual Scavenging, Child labour, Sexual Harassment at Workplace Act, Minimum Wage, Forest Rights Act.
3. Environmental Laws - Air Act, Water Act, LARR Act (EIA and SIA provisions).
4. Credibility of state, trust of people, violation of the rights of the stakeholders.
5. Withdrawal of people from the state.
6. Abuse of Article 356.
7. Creates an environment of impunity, anarchy and lawlessness.
8. Grievance Redressal Mechanism.
9. RTI - transparency and accountability.
10. FRBMA - fiscal deficit.
11. Independence of Media.
12. Independence of Institutions.

## We have been all the way to the moon and back, but have trouble crossing the street to meet the new neighbour - Dalai Lama

Possible Uses: GS1, GS2, GS3, GS4, and Essay

1. Materialistic world + Mad dash for success.
2. Loss of compassion, social capital, sympathy, empathy, human touch.
3. Loss of social capital.
4. Social media replacing face to face interaction and hence EI - new neighbour can be replaced with another human being.
5. Against virtual reality, augmented reality and Artificial Intelligence in essay ... we want to see a fictitious virtual world but chose to ignore the beggar on the street in front.
6. Rising divorces.
7. Lack of attention to children and declining role of families in value development of children.
8. Marginalisation of minorities and their alienation and radicalisation.
9. Mental health issues due to loneliness in young as well as seniors and consequent suicides, depression etc.
10. Shift of India towards individualism (urban life) from collectivism (rural life).

## An ounce of practice is worth a thousand words

1. Intellectual Integrity.
2. Development of work culture.
3. Leading from the front.
4. Social influence by demonstration - Be the change.
5. Role of family in value development of children.
6. Religion vs. Spirituality - pompous festivals and fests vs. following principles in life.
7. Policy implementation.
8. Diplomacy and negotiations.
9. Transparency and accountability in practice.
10. Justice should not only be done but also seen as done - long judgments vs. effect on field.
11. Citizen centric politics and ethics in governance.
12. Trust of people in government specially in LWE areas.
13. Elaborate constitutions vs. those implementing it.
14. Detailed laws vs. efficient delegated legislation with an ethical executive.

## Better than a thousand hollow words is one word that brings peace - Buddha

1. Diplomacy.
2. Consensus building.
3. All party talks @ insurgency and separatists.
4. Communication in relations should be honest, frank and non-adversarial.
5. Constructive criticism.
6. Anger should not inform speech.
7. Alphabet soup of schemes vs. one comprehensive step.

## The punishment suffered by the wise who refuse to take part in Government, is to suffer under the government of bad men - Plato

Possible Uses: GS1, GS2, GS3, GS4, Essay and Interview

1. Public participation, role of civil society, awareness generation and demanding accountability.
2. Core functioning of democracy - chance to everyone to participate and elect desirable people unlike dictatorship.
3. Role of press in keeping the government under check through critique of governments' steps.

4. Standing up for the rights of others or else no one will be left to stand for you.
5. Criminalisation of politics and the attitude of people that it is a dirty profession and hence decide not to vote or participate as candidates.
6. Controlling corruption and not accepting it as a part of public life or else it will always be.
7. Capable people joining bureaucracy.

**Man's capacity for justice makes democracy possible, but man's inclination to injustice makes democracy necessary - Reinhold Niebuhr**

**King was the fountainhead of justice but with the limitation that even he was obliged to rule according to the Dharmashastras - Kautilya's Arthashastra.**

**Democracy is the worst form of government except for all those other forms that have been tried from time to time - Winston Churchill**

**Democracy as a means to bring about a significant change in the living conditions of the depressed without resorting to bloodshed - B. R. Ambedkar**

**Indian independence is an opportunity to build a "prosperous, democratic and progressive nation and to create social, economic and political institutions which will ensure justice and fullness of life to every man and woman - Jawaharlal Nehru**

Possible Uses: GS2, Essay and Interview

1. Democracy - way to realise social, economic, political justice short of John Rawl's veil of ignorance - precocious India (Economic Survey 2016-2017).
2. Absence of democracy = authoritarianism = leads to injustices.
3. Ancient democracies in egalitarian societies - sabha, samiti, vidhata, gana - even the king was held accountable.
4. Empowerment of the weakest, upliftment of the poor - specialty of democracy.
5. Protection of minorities.
6. Modes of accountability in modern democracy - Parliamentary oversight, judiciary, elections in India.
7. Free media - essential part of democracy => enabling voice & justice to the marginalised.
8. Checks and balances by representative and participatory democracy.

### **Drawbacks of democracy**

1. Consensus building = slow tedious process.
2. Social demand - education and health on an infant state.

3. Parliamentary politics of stymieing bills for political gains.
4. Consolidating votes necessary as democracy runs on numbers => Vote bank politics, freebie politics.
5. Possible degradation to majoritarianism.
6. Allegations of minority appeasement.
7. Coalition and associated instability.

### Gandhi-

1. Whatever you do will be insignificant, but it is very important that you do it.
2. You may never know what results come of your action, but if you do nothing there will be no result.

Possible uses: GS4, Essay (**"let us vow to.." kind of ending in conclusion of essays**)

1. Leap of faith; do your best, god will take care of the rest.
2. Nishkam karma.
3. Humility and necessity of service.
4. Taking initiative as a leader.
5. Collective action problem vs. smallest contribution can be worthy - education - each one teach one, cleanliness (what difference does it make if one litters will not work), paying taxes on time, civic sense.
6. Social influence to change society by peer effect.
7. Resisting corruption.
8. Human effort, perseverance, incrementalism.
9. Curtailing carbon emissions.
10. Value of a single vote in a democracy.
11. Value of smallest donation.
12. Not wasting resources - food, water, energy.
13. Fiscal consolidation - curtailing inefficient revenue expenditure by each government office(r).

**When the rich fight (compete) the rich, it is the poor who die (suffer)**

Possible uses: Essay, GS, Answer Conclusion

It is advisable to give a compassionate and humanitarian touch in each essay at 2-3 places ... such thoughts help to give such a touch ...

## International Relations-

1. Cold war - nuclear weapon testing and its pollution effect on Marshall Islands.
2. World War II and the death of people in colonies due to famines.
3. Imperialism, colonialism and militarism.
4. Scramble of African Continent during competition among imperial powers.
5. Terrorism in Afghanistan and Taliban, role of west in Middle eastern crisis.
6. Soft power of western cultures competing for global hegemony obliterating local cultures.

## Environment-

1. 80 people die in NCR everyday due to air pollution= SUVs (status symbol in India) are 2.5% of the fleet cause 60% of the pollution.
2. Quest to provide better lifestyle in Developed countries - coral bleaching, islands accumulating plastic debris; e.g. Great Barrier Reef off Australia, Henderson Island = most polluted island.
3. Climate Change = major per capita polluters countries competing for sophisticated life => Maldives submerging.
4. Mineral extraction for lifestyle in cities = displaced and uprooted are the poor tribals and farmers (tribals form 7.5% of Indian population, yet form 50% of the total number of displaced people).

## Economy-

1. Globalisation = impact on tribals, exploitation of informal workers, environment.
2. Global financial crisis = lending by major banks like (Lehman Brothers) to make profits = poor lost savings.
3. Acquiring land under the concept of eminent domain from poor farmers.
4. Thomas Piketty - international competition for capital exacerbates income inequality.

## Political -

1. Vote bank politics by cash rich parties - hollowing out democracy instead of issue based and development based politics.

**The late B. R. Ambedkar: Bhakti in religion may be a road to the salvation of the soul. But in politics, bhakti or hero-worship is a sure road to degradation and to eventual dictatorship**

Possible Uses: GS1, GS2, GS3, GS4 and Essay

1. Politics of authoritarianism - disintegration of USSR.
2. Need for public participation, checks and balances, Separation of power.

3. Accountability.
4. Feudal organisation of state and dark ages in Europe.
5. Theocratic state and degradation of society.
6. Caste discrimination leading to disintegration of society in the name of religion (higher castes to be venerated and have all political and economic power and lower castes to be exploited).

**Be more dedicated to making solid achievements than running after swift but synthetic happiness**

Possible Uses: GS2, GS3, GS4 and Essay

1. Slow and steady wins the race in GS4 case studies.
2. Planned and thought out policies and IMPLEMENTATION and not half baked legislation in response to public pressure.
3. Avoid knee jerk reactions - Interpersonal relations via communication.
4. WORLD NEGOTIATIONS to reach long lasting solutions.
5. Constructive peace building through alleviation of insecurities.
6. Use of excessive force for peace does not work - AFSPA, curfews, sanctions, coercion and blockades.
7. Conservation measures for environment - not harm the economy and vice versa (Environmental Kuznet's curve does not work).
8. Economic - debt fuelled growth leading to 1991 BoP crisis vs. growth with fiscal consolidation and macro-economic stability.

**We can never guarantee our own security if we cannot assure that of others**  
**- Bertrand Russell**

Possible Uses: GS1, GS2, GS3, GS4 and Essay

1. Financial security - GFC crash of Lehman brothers, propel financial inclusion to leverage small savings and hence capitalise banks, informal to formal to widen tax base and increase public investment.
2. Health - urbanisation => marginalization of tribals => pushed deeper into forests => Man animal conflict/ interaction => ebola = epidemic in cities too; COVID Pandemic wearing masks and physical distancing.
3. Environmental - climate change, man-animal conflict due to expanding ecological footprint.
4. Mental - people being radicalised => terror, communalism; Carnage of partition of India.
5. Cultural security - Partition of Pakistan, Sri Lanka - Sinhala Tamil issue, Insurgency in North-East India, Militancy of youth in Kashmir (paranoia regarding cultural subjugation and economic dimensions).

6. Economic - jobless being prone to crime and violence as paid for mercenaries.
7. Inequality - social, economic, biological dimensions.
8. Physical - peace and security in society as a whole.
9. Global - ISIS + terrorism.
10. Food insecurity and consequent riots.
11. GS-4 - benevolence, welfare, rationalism and categorical imperative for a stable society.

**Very important - A similar topic appeared in UPSC CSE Essay 2018 - "Poverty anywhere is a threat to prosperity everywhere"**

**Civilization is the encouragement of differences.**

**No culture can live, if it attempts to be exclusive.**

**Intolerance is itself a form of violence and an obstacle to the growth of a true democratic spirit.**

**Honest differences are often a healthy sign of progress.**

Possible Uses: Essay, GS1 – Society, GS4 – Consensus building in case studies

1. Society, secularism, in/tolerance.
2. Growth of science.
3. Inclusiveness, xenophobia, regionalism, Rohingya violence, minorities, Tamil Sri Lankan issue, Partition of India in 1947 and Pakistan in 1971.
4. Preamble, Article 51A(e)
5. Public consultation, consensus building, Democratic decision-making.
6. Obscurantism vs. Renaissance, Enlightenment and Reformation.

**Freedom is not worth having if it does not include the freedom to make mistakes**

Possible Uses: GS2, GS3, GS4 and Essay

1. Start-ups.
2. Role of society - differentiate between honest mistake and predetermined malice.
3. Liberty.
4. Constructive criticism for children rather than damaging their self-esteem.
5. Live and learn.
6. Governance - Prevention of Corruption Act, Distinguishing between malfeasance and misfeasance.
7. Research and development, innovation - risky new projects.
8. Education - learning by doing, adaptive learning - involves making mistakes.

**The difference between what we do and what we are capable of doing would suffice to solve most of the world's problems**

### Possible Uses in Essay and GS-

1. World negotiations - climate change, crisis in middle east.
2. Policy implementation, development.
3. Red tape, CORRUPTION, Delays in projects.
4. Leadership - breach the gap b/w what we do and what we are capable of doing.
5. Dedication to work, diligence in work, work ethic.
6. Cleanliness.
7. Demographic Dividend.

### **Victory attained by violence is tantamount to a defeat, for it is momentary**

1. Retributive justice and its limitations - against capital punishment.
2. Uselessness of war for peace until life is in danger (war is last resort; solution comes from negotiations).
3. Cracking down on those with radical mindset for peace is counter-productive; Reaching out to marginalised communities and trust building should be the way ahead.
4. Behavioural change by IEC not punishment.
5. Social reform cannot be by violence (like Gandhiji said co-opt and convince the Sanatanis).
6. Sectarian violence.
7. Very much useful in ethics case studies.

### **Every saint has a past, every sinner has a future**

### **GANDHIJI**

1. Hate the sin, love the sinner
2. The weak can never forgive. Forgiveness is the attribute of the strong.
3. Non-violence is a weapon of the strong.
4. An eye for an eye will only make the whole world blind.
5. Non-violence requires a double faith, faith in god and also faith in man.
6. Whenever you are confronted with an opponent, conquer him with love.
  1. Reformative justice, not retributive justice, vengeance, retribution.
  2. Juveniles in conflict with law + Juvenile Justice Act.

## **Agriculture and Food Security**

### **Examples-**

- Karnataka's Crop Loan Waiver System - details such as Aadhaar, land survey, ration card numbers, bank data and digitised land records (Bhoomi database) and ration card records - saved in 4000 crores in double payments since Dec. 2018 to June 2019+
- Helped eliminate 8 lakh loans as non-farm.
- Farmers of northern districts of Haryana - crop diversification scheme called 'Jal Hi Jeevan Hai' - HR gov. - diversify paddy area into maize, arhar dal (pigeon pea) and soybean@ 7 dark zone blocks - 50000 ha
- Maharashtra State Agricultural Marketing Board has appointed trade representatives in other states to help farmers sell their produce in markets outside the states. As of now only the traders understand the supply chain, demand of the markets, know the key players. Farmers can tie up with agencies like Mother Dairy that run retail fruit and vegetable shops in NCR. Officers liaison with their counterpart and it ensures timely payment. Contacts developed by officers were shared with farmers online. Board will also provide farmers with road transport subsidies to carry out trade outside Maharashtra.
- Berhampur, Odisha Milk ATM - vending machine for fortified milk - eliminate the use of single use milk packets - by IAS Vijay Amruta Kulange.
- Andhra Pradesh gov. - e-Rythu App - mobile platform - farmers to market produce at reasonable prices.
- Sikkim - World's first totally organic agriculture state - Farmers traditionally never used chemicals for cardamom - Sikkim's main cash crop
- Traditional knowledge for conservation - Orans of Rajasthan
- Food Safety-
  - ◆ State Food Safety Index (SFSI) - FSSAI.

- ◆ Raman 1.0 by FSSAI - hand-held battery operated equipment for rapid detection (in less than 1 minute) of economically driven adulteration in fats, ghee and edible oils.
- ◆ Food Safety Magic Box - do-it-yourself food testing kit with manual and equipment to check for food adulterants.
- ◆ Eat Right Awards: Instituted by FSSAI.
- SMART project in Maharashtra villages
  - ◆ State of Maharashtra Agri-business and Rural Transformation (SMART).
  - ◆ 10,000 villages trained in sustainable farming.
  - ◆ Focus at villages facing the worst agriculture crisis and suffering from lack of infrastructure.
  - ◆ Assured value chains.
  - ◆ Facilitated agri-business investment and stimulated SMEs.
  - ◆ Supported resilient agriculture production systems.
  - ◆ Expanded access to new and organised markets for producers.
- Million Farmers' School in Uttar Pradesh
  - ◆ Rigorous training of staff by proper trainers.
  - ◆ Structured training modules for farmers.
  - ◆ Kisan pathshalas at campaign mode.
- Agri R&D- Investment in research has led to the development of Pusa Basmati 1121 and 1509. Basmati exports range between \$ 4 - 5 billion annually.
  - ◆ Sugarcane variety Co-0238 in Uttar Pradesh - recovery ratio has increased from about 9.2 in 2012-13 to > 11% today.

## NGOs

1. Microsoft India, NITI Aayog pact for AI tools in agriculture to provide Farm advisory services.
2. Consultative Group on International Agricultural Research - HarvestPlus programme - fortify major staples with micronutrients - released iron-rich pearl millet in India.
3. All India Kisan Sangharsh Coordination Committee - march to Parliament to press its demands in Dec. 2018.
4. FarmerUncle - Gurgaon-based online direct-to-consumer fruit trading platform.
5. Cooperative-based dairy activities (Saras in Rajasthan and Amul in Gujarat).
6. Zero Budget Natural Farming - Tohu village in Himachal Pradesh's Hamirpur district
  - ◆ increased wheat productivity by three times
  - ◆ reduced urea consumption by soil health cards SHCs
  - ◆ increased their income by ₹ 5,000 to 6,000 per acre.

7. Thirunelly Agri Producer Company Ltd. is a farmers' collective in Kerala's Wayanad district. It works on conserving and propagating traditional rice varieties by organic methods. Procuring them from members at a premium + selling end product at affordable price after value additions.
8. Kerala group farming system
9. Yavatmal, Maharashtra - Cotton district battled pesticide poisoning with the NGO Dilasa
  - ◆ From 22 deaths per year to 0.
  - ◆ 28,000 safety kits — masks, gloves and synthetic aprons — were distributed free of cost to farmers.
  - ◆ Awareness drive in villages.
  - ◆ Timely treatment.
  - ◆ Dedicated wards in government medical facilities with dedicated staff.
  - ◆ Cases against companies, dealers & individuals for violating provisions of the Insecticides Act.
  - ◆ Advised farmers to spray at the time insect was laying eggs => 8/10 sprays vs. 15 last year.

## International

### Agriculture

- Uberisation of agriculture - by developing an App based support system for custom hiring of happy seeder being used in Nigeria, Rajasthan, MP, Gujarat, Uttar Pradesh and Bihar.
- Scottish farms growing salt tolerant crops with sea water.
- Dogs helping farmers in US detecting diseases in crops.
- Farmers across China, Japan, Iran and France are using ducks instead of pesticides as they eat insect and weeds.
- German supermarket SirPlus sells food rejected by other shops due to minor defects.
- Desert control has developed a technology called Liquid Nanoclay. It is a mixture of clay, nano particles with water added onsite. The product is then directly applied on site. It works by creating a 20 inch thick soil strata that acts as sponge to absorb nutrients and water; it lasts 5 years and reduces water need by 50% thus improving the yield quality.
- Dutch Tomato cultivation-
  - ◆ Hydroponic system (uses 90% less water) - Tomatoes are grown in small bags of rockwool substrate. It is made by spinning together molten basaltic rock

into fine fibres. It contains nutrients, allows plants to soak up water even when moisture levels are low (Rockwool - lightweight hydroponic substrate is made from spinning molten basaltic rock into fine fibers - formed into cubes, blocks, growing slabs and granular products.).

- ♦ Uses geothermal energy (to heat greenhouses).
- ♦ No pesticides used.
- ♦ Farms circulate waste CO<sub>2</sub> into the greenhouses from a local Shell oil refinery. Plants need it to grow and this reduces CO<sub>2</sub> released into the atmosphere.
- ♦ Maximizing yield-
  - Double glass roof to conserve heat.
  - LED lights - plants can keep growing through the night.
  - Precision farming.
- Open Agriculture initiative - open source digital library allowing you to download the specific conditions needed to grow each type of plant as efficiently as possible so you can grow them anywhere globally - saving on shipping.
- Persona group - HR firm in Japan converted its office building into city farm in lobbies, guest spaces, shelves, meeting spaces.
- Italy's underwater farm "NEMO'S GARDEN" - vegetables in airtight pods anchored to seabed; sunlight heats the interior to the right temperature to grow. Seawater in pods evaporate; condenses on roof; drip as freshwater and feeds the plants; Pods are sealed - no pesticides are needed; They are maintained by scuba divers.
- Nyon, Switzerland - Agriculture scientists fly a drone to study nitrogen level in leaves, not at farm level but at each individual plant level.
- China sent science students to live with farmers to help farmers to provide them scientific inputs; Customised guidance was provided to every farmer as per local soil and weather. From 2005-2009 the wheat yield increased by 22%, corn by 29% in Quzhou; Students got hands-on experience.
- Plant based meat - 95% less land and 74% less water.
- Urban farming - uses rainwater, heat from building's cooling system warms green house. Harvested food gets on to the shelf an hour later.
- Singapore - urban farm on top of a mall. Food cultivated using hydroponics. It does not use soil or chemicals/pesticides; Better nutrition value as the vegetables are locally produced not transported.
- AeroFarms New Jersey-
  - 95% less water than normal farms

- plants cultivated in a tray under purple LED lights - most efficient absorption of nutrients by plants, light is customised to meet the needs of plants.
- computer monitored to give exact nutrient/ water needed to each plant.
- no pesticides.
- no time need for soil rejuvenation.
- roots sprayed with nutrient mist - 40% less than hydroponics.
- vertical farming.
- food produced closer to consumers - reduces transport emissions.
- Abu Dhabi doing it in shipping containers
- 390 times more crops per sq<sup>2</sup> than traditional; seed to harvest 3 times less time than traditional.
- But
  - ▲ ENERGY - high energy input needed
  - ▲ Economically viable only for leafy green as need less light and have good margins
  - ▲ Investments by - Musk, Bezos
  - ▲ Only premium markets as of now.
  - ▲ Qualities of crop needed - high edible mass %, low plant height, fast growing cycle, suited to hydroponics, low shelf life, electricity access
- Food Wastage-
  - People led redistributive justice - UK - Community fridges where people donate leftover food, and the needy can borrow and thus ensures food security and reduces food wastage.
  - Startup Apeel - innovative way to make food last long by using a coating made from natural peel made from fatty acids found in peel; Food wastage = \$2.6 trillion per annum; Food rots as moisture goes out and oxygen gets in.
  - France wastes 1.8% food. First country globally to adopt an anti-food waste law. Supermarket banned from throwing away unsold leftovers - They are required to give it to charities. Restaurants give carrybags for leftovers.
  - Reduce waste by root to stem cooking-peels of fruits and veggies are nutritious. They have vitamins and minerals. We can use greens to make dips, salads and dals; Fruit peel can be used to make tea. Fruit seeds have vitamins and minerals. Zest can be made from peels of citrus fruits.

- Wefoods supermarket in Iceland sells out of date food; run by volunteers and profits go to charity. 30-50% discount; foods have minor flaws incorrect labels damaged packaging, and tried to reduce wastage; 800 million go to bed hungry. May be we can do this for marriage parties and party foods.
- China - kitchen waste is fed to cockroaches (50 tonne waste is fed to 1 billion cockroaches). They are used as a source of protein for pigs and livestock, medicines and beauty products @ city of Jinan
- U.K. appointed leader to tackle food waste - Ben Elliot - campaigned to reduce food binned every year by restaurants, supermarkets and manufacturers.
- Ooze company which sells smoothies - buys local organic food no matter how disfigured it looks; 40% food wasted in UK due to improper looks.
- Wasteless app - AI based app that works out which food need to be eaten based on which is approaching expiry date. This reduces prices of food stuff in real time as they approach expiry date.

### Innovative Ideas-

- Impossible Foods and Beyond Meat - plant based meat can avoid corona like crises and also resource efficient, ethical protein for hungry; 95% less land, 74% less water, 87% less GHGs.
- Finnish Scientists created new protein food using hydrogen and bacteria - could replace palm oil and reduce deforestation. It begins with getting hydrogen by splitting water. It is fed to bacteria that produces protein flour; It has no taste and can be used in bread, animal feed and can compete with soya, replace palm oil.
- Refugees in Jordan and scientists from the UK are growing fresh food using old mattresses - using them as substrate and hydroponics for nutrients.
- Vertical farming - 350 times more food per acre, 1% water year round; company Plenty - 6m high towers, food grows on hanging structures using LED lights.
- Seaweed - food for the future-nutritious => iron, fibre, calcium, folic acid => low in fat and calories
  - Flourishing sustainable ecosystems - fish + mussels + seaweed
  - fish waste provides food for mussels
  - powdered mussel shells are fed to the fish => symbiotic relationship
  - fish exhale CO<sub>2</sub> which makes seaweed grow

## Health - Nutrition and Vaccination

### Examples-

- Birhors - a nomadic hunting, gathering tribe at Koderma district of Jharkhand. 5 years ago - no immunization or healthcare for pregnant mothers and newborns.
  - ICDS was introduced but Anganwadi workers of so-called upper caste refused to touch kids.
  - Rashtriya Jharkhand Seva Sansthan (RJSS) of Child Rights and You (CRY) suggested to hire a member of the community.
  - Increased awareness about hygiene procedures.
  - Vaccination.
  - Institutional deliveries.
- TN government - Noon Meal Scheme led to better nutritional, educational and inter-caste harmony outcomes in the State. Supreme court made it a mandatory policy for all States.

### International examples-

- Schools in Ecuador are swapping burgers and pizza for quinoa and corn based traditional meals which are high in nutrient and low in fat, sugar, calories. They take the knowledge home. This same idea has helped Japanese kids to cut obesity and grow taller.

## Marriage

### Example-

- Karnataka - has made child marriage null and void.
- Madhya Pradesh - Lado scheme to curb child marriage.
- West Bengal - 'Kanyashree Prakalpa' initiative to combat child marriage and ensure education to the girl child.
  - ◆ Cash deposited in bank account of girls for every year they remained in school and unmarried.
- MWCD's proposal - to make child marriage 'void ab initio' pending.

### NGOs-

- Young Lives India's 'India Child Marriage and Teenage Pregnancy Report' mentions that secondary schooling completion rate is much higher in unmarried girls in the 15-19 years of age group.

## Child Labour

### NGOs-

- Kailash Satyarthi-
  - ◆ Kailash Satyarthi Children's Foundation
  - ◆ Bachpan Bachao Andolan (BBA)
    - Protection of children
    - Works with law enforcement agencies and policymakers.
    - Several laws for protection of child's rights.

## Criminal Justice

### International-

- Brazilian Open Jail - inmates have keys to their cells, no guns with guards, no inmate numbers as it depersonalises them, provides them education and skilling and ability to develop hobby => 20% of the inmates reoffend as opposed to 70% globally; jail is run at 33.3% cost; The model is one of trust and responsibility on the inmate. It was proposed by Valdeci Ferreira.
- Malaysia recently abolished capital punishment.
- Norway uses arts, cookery, yoga and education to turn violent criminals into model citizens. Inmates encouraged to study, socialise. Wardens and inmates eat and exercise together.

## Culture

### NGOs-

- India Pride Project - protecting Indian antiquities and involved in repatriation of works.
- Indian Trust for Rural Heritage and Development (ITRHD): preservation of Indian Heritage and Culture in Rural India.

### International-

- Mindfulness and meditation is a part of curriculum in 370 schools in England.

### Differently-abled People

- Willem Johan Kolff is the father of artificial organs and pioneer of hemodialysis was dyslexic.
- Helen B. Taussig founded the field of paediatric cardiology. As an adolescent she struggled with dyslexia.
- Supreme Court mandated those with colour blindness should not be discouraged from taking the MBBS exam.
- World's first IT campus for differently-abled people has been set up in Hyderabad.
- Varun Khullar was paralysed waist down by an accident in Manali in 2014 and became wheelchair bound. He studied music and is now a resident DJ at a club in New Delhi.
- Divyanshu Ganatra was 19 when glaucoma claimed his eyesight. Today he runs an adventure sport company.
- Nidhi Goyal lost her degenerative eyesight to disorder at 15. She converted her subsequent dating misadventures into an internationally acclaimed stand-up comedy sketch.
- MA Johnson rendered immobile by polio at 6 months of age. Yet he could pioneer in the manufacture of LED bulbs in India. He runs an electronics industry and a network of service centres across the Kerala.

### International-

- Camphill Movement has 100 communities globally. In a Scottish Village called Newton Dee people with learning disabilities live with carers. They help their housemates to develop careers and do productive work in a supportive community like working on a farm, garden, houses, cooking clean and machine skills, social identity.

### NGOs-

- Sambhavna filed a case in Delhi HC to redress the fact that in JNU no post reserved for PWDs - Delhi HC case.

- National Centre for Promotion of Employment for Disabled People (NCPEDP) has shown that 84% seats reserved for PWDs in higher education institutions are vacant.
- Disability Rights India Foundation (DRI) conducted a study of Rights of Persons with Disability Act across 24 States and found out that more than half have not notified the State rules.
- Bhagwan Mahaveer Viklang Sahayata Samiti has launched India for Humanity initiative with MEA and is distributing artificial limb fitment camps world over.
- Buddhist Association for the blind, Saavi Foundation and Swagat Thorat are working on first ever constitution in Braille.
- Anuprayaas has been the driving force behind India's first blind friendly station.

## ECONOMY

### Government-

- Affordable housing by Gujarat government for migrant labourers in Bhuj so that they can save more.
- Hunnarshala Foundation.

### NGOs-

- Ministry of Rural Development + Maruti Suzuki India Ltd. - MoU for Training Rural Youth for Skill Development under Deen Dayal Upadhyaya-Gramin Kaushal Yojana.
- Champion Employers and Industry leaders are providing training and captive employment to Deen Dayal Upadhyaya-Gramin Kaushal Yojana candidates (DDU-GKY), strategic alignment of objectives of DDU-GKY with HR strategy of organizations.
- Infosys has launched a digital learning platform, offering curated content to engineering students in their 3d and 4th years. The idea is to create more industry ready talent among fresh graduates.
- Lego foundation and education charity Porticus have invested \$ 8.8 million in playlabs - Uganda, Tanzania, Bangladesh. In these playlabs, kids choose own activities from reading stories together, painting and drawing, playing outside. This helps them develop self expression by dance, songs, stories, crafts - labs are operated by NGOBRAC.
- CII launched Fiscal Performance Index which incorporates qualitative assessments of revenue & capital expenditure, revenues, fiscal prudence and level of public debt.

### International-

- Singapore most competitive economy - skilled workers, cutting edge infrastructure, openness to immigration, business friendly laws and tax policies.

- What Bangladesh did right to achieve rapid economic growth - demographic dividend, digital tech, garment industry and knowledge based society - tech hub in Dhaka; tax breaks to entrepreneurs, 100 SEZs.
- France and Germany have enacted right to disconnect laws
  - In France employees unreachable on smartphone outside of work hours cannot be tagged for misconduct.
  - In 2015, EU mandated time spent in commute (to and from work) as work.

## Innovative Ideas-

- Eco-tourism - ensure boost to local economy and ensure their participation, use the proceeds to conserve species. Also use it to run schools and health clinics.
- NZ companies are giving a four-day workweek - 20% more productivity.
- Time banks where you can have account for hours of services rendered and get the services you need in return whenever you need it so there is no problem of double coincidence of wants as there used to be in barter system.

## Education

### Government

- Project Second Innings in Dahod (an Aspirational District) drafting retired teachers to sign up voluntarily for remedial classes where they can learn reading, writing and maths
- Delhi
  - happiness curriculum
  - entrepreneurship mindset curriculum.
  - special classes for academically weaker students
  - exams practice
  - home counselling to improve attendance
  - better training for teachers and administrators
  - Improved physical infrastructure
- Welfare of migrant children-

- Punjab-
  - ♦ Cash awards given to teachers at learning outcomes
  - ♦ ₹ 900 crore smart school projects
- Karnataka school teachers were given instructions to improve students' strength or get transferred; Report cards were given to teachers based on the performance of students.
- MP - Digi enabled teaching at 15000 schools.
- Roping in social groups to improve facilities at school, Government Primary School at Berkhedi-
  - ♦ Perfect execution of community participation model.
  - ♦ Headmaster Prakash Musre - quality education to the students and increasing student enrollment.

### NGOs-

- Vijaya Mulay was an icon of educational technology
  - ♦ She was a pioneer of animated films for children. Her short film, 'Ek, Anek Aur Ekta' - Internet became a hit.
  - ♦ She warned against the tendency of using technology for replicating and magnifying entrenched systemic weaknesses.
- Banka Unnayan Abhiyan-
  - ♦ Interactive online and offline study method.
  - ♦ Interactive concept videos, real-time doubt-clearing, examination and digital report card generation.
  - ♦ Teaching Class IX and Class X students through smart classes and Eckovation app.
  - ♦ Banka district's 70 schools under a project that was started in August 2017.
  - ♦ Replicated by Unnat Bharat Abhiyan in schools of about 5,000 villages across the country.

### International-

- Ecole 24 - school in Paris which does not have teachers, a fixed curriculum; It works on a co-learning model where students teach each other.
- Brown university is ending the culture of student loans. Best education for less wealthy students; students assessed academically and at success given a grant for education fees.
- In Iceland people give each other books on Christmas eve then spend the night reading them - it is the 3rd most literate country.
- Denmark schools where students grow their own food in large rooftop gardens. Food grown is used in cookery classes.

- Shanghai model of inclusive education - class does not advance until every kid has finished the task.
- Finland is teaching children the skills of future – collaboration, communication, diversity, tolerance and creativity.
  - Kids start school at 7. They spend early years playing at subsidised pre-schools based on learning through playing. One standardised test is conducted at end of high school. Otherwise teachers set their own grading system. Teachers have masters degree in education. They can develop flexible education strategies best suited to children.
  - Students choose between 2 paths for high school. University or vocational education comprising of apprenticeships and can switch between the two too. University education is free. Adult education is promoted and subsidised.
  - Education is free for all. Equal access to education is a constitutional right.
- Why kids in Estonia do better in learning and education-
  - Teachers are required to have masters degrees, and are paid handsomely.
  - Teachers have freedom to design their own pedagogy within the confines of a curriculum
  - Adopting digital tech + put digital skills in the curriculum; by 2020 every school must use only digital learning materials
  - Free books, transport, lunch
- UK is shifting maths classes outdoors. Closer to nature kids concentrate more, learn better. Teachers enjoy more. This leads to better health and creativity.
- Norway - Kindergarten kids spend 70% school time in the summers outside; Finland, Singapore too.
- In Japan school kids help prepare, serve and clean up their school lunches and use the veggies grown in terrace gardens - learn about healthy eating and responsibility. Subsidised lunches are mandatory. Balanced meal created by nutritionists.
- South Korea - Fail expo where people are taught it is okay to fail. The idea is to change attitudes towards failure. Meet other job seekers and entrepreneurs who have struggled and learn about the schemes that could support them. Inspired by Finland's International Day of Failure, Museum of Failure in Sweden.
- UNESCO Asia Pacific Regional Bureau on Education's Happy School Project and Happy School Framework
  - Launched in cooperation with MGIEP
  - Social & emotional learning curriculum - Libre
    - Critical inquiry
    - Mindfulness

- Compassion
- Empathy

### NGOs-

- ASER
- Sonam Wangchuk - the educational reformer and muse for 3 idiots movie led the Ladakh Students' Education and Cultural Movement of Ladakh to coach Ladakhi students under the name - Operation New Hope. Before that 95% students used to fail the government exams.

## ELECTORAL DEMOCRACY

### Govt.

- State Election Commission of Maharashtra
  - ◆ June 2013 order: if NOTA gets the highest number of valid votes then elections to the particular seat is countermanded and fresh elections are conducted; However the same candidates are allowed to contest new election.
- State Election Commission of Haryana - if all contesting candidates individually get less votes than NOTA then none is declared as elected and all the contesting candidates are ineligible to recontest re-election.

### Examples-

#### International Examples-

- Lessons which India can adopt from Bhutanese Election System
  - ◆ Election Commission of Bhutan (ECB) provides for public campaign finance
    - allocation of finances
    - monitoring, auditing
    - strict penalties for misuse
  - ◆ Election Act 2008 bars religious personalities from joining a political party participating at electoral process.
  - ◆ ECB provides for common fora for parties to address electorate at specified venue for electioneering.
  - ◆ 2 public debates - presidents of parties/ nominees take part.
  - ◆ Strict guidelines for all media outlets - submit undertaking on responsible reporting and create a level playing field.
  - ◆ Social media rules and regulations ensure accountability and responsibility.
  - ◆ Election advertising, media coverage of elections rules and regulations, code of conduct for media persons ensures check on misuse of mass media.

- 70% of the voters in the 18 constituencies in Chhattisgarh that went to polls in Nov. 2018. In districts marked as the worst affected by Maoist violence in the country - voters voted in with the conviction saying how many fingers can dadalog chop off?
- UK - independence of the Speaker is secured - no party contests against Speaker in the next general election.

### NGOs-

- #PowerOf18campaign: by Twitter India - encouraging youth to conduct public debates and civic engagement for the 2019 general elections. Resource platform for youth to find information on elections, social causes and join public conversation.

### Innovations-

- AI Biometric voting machine which can be directly linked to the aadhaar details of a person. It will use the finger print to verify identity. This will help to void fraudulent voting; It helps voting in the city of your residence without having to travel to the constituency where you are registered.

### Energy

#### Examples-

#### Government-

- Punjab - farmer given refund for the units of free electricity they didn't consume.
- Jharkhand - 249 remote villages powered by solar microgrids.
- Indian Railways to run on 25% solar power by 2025.

### International

- S-Park - It's system that consists of a front bicycle wheel, and bike rack. As a rider bikes around, the spinning front wheel stores kinetic energy in batteries. When the bike is parked at the S-Park rack, that energy flows out to the area's electric grid.
- Company Ten Fold Engineering - house that is an elaborate mechanical system and can unfold in less than 10 mins; foldable units can expand to 3 times the size. Uses sunlight and heat during the day by unfolding and traps heat inside by folding in the evening.

### International

- Scotland putting giant turbines at the bottom of the sea to generate energy from the power of ocean
- Tesla by Elon Musk - 100MW battery system online in South Australia can store and sell energy now.

- American Cities putting turbines in water pipes to generate clean energy - Portland in areas of gravity flow, Riverside (California) powers the water system, powers street lights.
- Renewable energy is Germany's 40% source of power; 65% by 2030.
- World installs 70,000 solar panels every hour over the next 5 years; China is leading by installing 50% of new solar capacity in 2016 due to low cost, high efficiency, political will.
- UK in April 2017 ran without coal for the first time since industrial revolution; In June - wind, nuclear and solar energy output was more than natural gas and coal; UK has been able to wean itself off of coal but is dependent on natural gas as an energy source; Contribution of renewable energy in UK's energy mix has been more than coal for 90% of 2017.
- China
  - Invested \$130 billion in 2017 in clean energy, Increased by 24% compared to 2016
  - More investment in wind, solar and hydro power than any other
  - Solar plant over man made lake over collapsed coal mine - reduces land required, cooling increases efficiency
  - Produces 66.6% of world's solar panels
  - Doubled solar capacity in 2016
- Since 2017 - 50 coal fired power plants in US have shut, creating 1,10,000 new renewable energy jobs.
- California-
  - New homes mandatorily need to have solar panels
  - Public buses are being transformed in zero emission
  - Building massive battery storage system - renewable energy gives 44% of state power
- Half of all cars sold in Norway in 2018 were electric - free parking, access to bus lanes, tax incentives.
- UK is the first G7 country to have a net zero emission target by 2050 enshrined in law now.
- Sweden is using heat from servers to heat the homes and offices by circulating water to extract the heat from the servers and then heating houses.
- Steps taken by Netherlands towards circular economy
  - Bike lane has been made out of used and recycled toilet paper. The paper is dried, sterilized and bleached. The fluffy stuff with high cellulose content is extracted and it replaces plant based cellulose in asphalt. Dutch have more bicycles than people. It has 35k km of bike lanes.

- Bike path made out of recycled plastic.
- Dutch companies are making phone called Fairphones. These are built to last. They can be repaired and recycled easily. Their components are responsibly sourced.
- The Edge is a series of smart sustainable buildings which have solar panels power phones, laptops, electric vehicles. They have up to 30000 sensors which continuously track movements and temperature and thus optimize energy usage based on need. They use 70% less electricity than peers.
- Netherlands is producing 100% carbon neutral electricity.
- It intends to halve its usage of raw materials by 2030.

### Innovative Ideas-

- Vertical faced windmills - reduce bird hits and are efficient.
- Smart flower - flower made of solar panels follows the sun throughout the day to ensure maximum clean energy is produced.
- Solatube is a daylight system which uses roof-mounted domes which use refraction to get light into windowless rooms. Light travels in thin tubes lined with special materials that reflects 99.7% of the natural light. It brings natural light indoors by redirection and tube is also fitted with solar cells.
- Kids used solar panels to generate electricity, and then passed the electricity through sewage water to decompose it into hydrogen and oxygen gas.
- Microgrids enable the people to become prosumers (producer and consumer). Microgrid controllers - enables decisions regarding net metering modulated by demand of prosumers. The system also uses weather forecast and projected trends of energy production. Thus, it can adjust intake and outgo of energy.
- Smart grids to adjust prices to keep up with supply and demand by learning about people's consumption habits. People even get messages in their thermostat/ smart devices that they could financially benefit by delaying consumption.
- Smart distribution system - shows us how and when what amount of energy is moving around.
- Ways to store energy - compressed air, batteries, hydropower.
- Organic solar cell or plastic solar cell is a type of photovoltaic that uses organic electronics - conductive organic polymers or small organic molecules, for light absorption and charge transport to produce electricity from sunlight by the photovoltaic effect. Most organic photovoltaic cells are polymer solar cells.
  - They have lower efficiency (33.3%), lower stability and lower strength vs. inorganic photovoltaic cells aka silicon solar cells.
  - Lightweight, disposable and inexpensive to fabricate (can be fabricated using even printed electronics), flexible, customizable at molecular level, less

adverse environmental impact. They exhibit transparency. and hence can be used even on windows, walls, flexible electronics.

- But with leaf design efficiency can be increased by 47% (10-15% needed for commercialisation); In leaf design wrinkles and folds relieve mechanical stresses from bending.

## ENVIRONMENT

### Air

#### Examples

- Bhubaneswar has become 0.5°C hotter due to urbanisation between 2000-2010.
- Electric scooter sales doubled in 2017-18 vs. last year. Car sales halved in the same period. Charging cost of 2 wheelers are about 10% for same distance.
- e-rickshaw 'Namma Auto' - launched to promote the shift to less polluting autorickshaws in Bengaluru. Model for adoption EVs:
  - Systematic adoption of EVs by coordination of urban planning, transportation and power sectors.
  - Center for Study of Science, Technology and Policy (CSTEP) has developed suitable routes for e-buses in city.
  - Analysed constraints:
    - Location and size of depots
    - Schedule of buses
    - Electrical loading of the distribution network
    - GIS platform and incentives
- Jharkhand government introduced EVs for official use.
- Odisha - Public bicycle sharing system - 'Mo Cycle' system.
- Delhi government launched an Open Transit Data Platform for real-time data for use by 3rd party app developers and researchers. They use the data to develop transport solutions. Geo-coordinates of all bus stops, route maps, timetables and locations of all buses with 10 sec lag GPS feeds.
- India to make every public vehicles electric by 2030 - Bengaluru home to India's first and largest electric only cab service.
- MoEFCC
  - Harit Diwali-Swasth Diwali" campaign
  - "Green Good Deed" movement - Idea is of social mobilization for preserving, conserving and protecting environment
- Genetically modified common indoor plant - Pothos plant ivy
  - Removes pollutants in the air in the house

- ◆ Benzene or chloroform gas
- ◆ Concentration of chloroform dropped by 82% and became undetectable by day six
- Gujarat launched India's first trading programme to combat particulate air pollution - PAT kind of model.

### NGOs-

- No Burn Farm campaign works to communicate to farmers that crop burning is not the best method.

### International

- UK first G7 to have a net zero emission target by 2050 - enshrined in law now - as of now cut 80% by 2050 with respect to 1990.
- Car free zones-
  - ◆ Australia is building neighbourhoods where you do not have to use a car called 20 minute neighbourhood in Melbourne - work, medical help, education and recreation are just 20 min away - foot, bike or bus.
  - ◆ NY Times square - once a congested area now a car free pedestrian zone.
  - ◆ Barcelona is targeting to be a post car city
  - ◆ Hamburg, Germany - 40% of the road area by bike and walk ways.
  - ◆ Open streets movement - take cars off the road for one day for about 120 km stretch in Bogota on Sunday - instead of cars there is imaginative community type use of roads like fairs and gatherings.
  - ◆ Oslo - removed parking spaces in the downtown area and build benches, tiny parks and bike lanes.
  - ◆ Paris goes car free for one Sunday every month.
  - ◆ Brussels is cutting 25% of its on street parking places - providing extra space for pedestrians, cyclists and public transport.
  - ◆ Banning polluting vehicles - Madrid (from city centre), Paris, Brussels, Copenhagen.
  - ◆ Partial ban on polluting - New York and Portland.
  - ◆ France wants to triple the number of cyclists. 350 million euros have been invested in new bike paths. New ones have been connected to old ones. New buildings will have bike parks. By 2022 every high school will offer cycling lessons. Tax incentives are being provided by purchasing cycles. Paris - 400 miles of bicycle lanes in 2007; Developed bike sharing programme. Vélib is the largest and most used at West.
  - ◆ Norway witnessing a boom in electric cars due to the efforts of the government.
    - 30% of all new cars being sold in Norway are electric as opposed to 2% in Europe and 1-2% in U.S.

- Subsidies and perks are being given to the buyers.
- Target is to sell only zero-emissions cars by 2025.
- Government waived hefty vehicle import duties, registration and sales taxes.
- Exemption from road tolls and free use of ferries, bus lanes in congested city centres.
- Parts of Tokyo and Kyoto - pedestrianized certain streets.
- Copenhagen has banned motorized vehicles in the 1960s. 200 miles of bike lanes have been developed in the city and 50% of the population bikes to work.
- São Paulo has banned Sunday movement of motor vehicles on Paulista Avenue (marker of Brazil's economic vibrancy and rising global stature). It has given booster shot to city's cultural scene and has helped breaking barriers between people.
- England has targeted to achieve zero emissions in double-decker bus by retrofitting them to run on hydrogen.
- Scotland has launched 1st hydrogen powered seagoing ferry.
- Japan is promoting and using hydrogen powered vehicles and is working on increasing hydrogen refueling stations.
- Norway's steps to promote sale of electric vehicles:
  - No sales tax
  - No annual road tax
  - Lower tolls on roads
  - No parking fees in public car parking
  - They can drive in bus lanes
  - Installed charging points all over the country
- Europe - sleeper trains are making a comeback as alternative to flying; Austria launched one - Vienna to Brussels, UK - London to Scotland; Sweden has coined a word for flight shame - flygskam.
- Netherland has more cycles than people and quarter of all trips are by bicycles - government support by tax free incentives for work commutes and infra (cycle lanes, parking spots, carriage racks on buses).

## CLIMATE CHANGE IMPACTS

- Melting glaciers can destroy villages on coast by giant waves even tsunamis. Innaarsuit island in northwestern Greenland next to 100 m high glacier.
- Munroe Thuruthu, Kollam district is slowly going under water, fleeing residents are becoming climate refugees. Climate change is forcing someone to flee home every 2 secs creating a refugee crisis.

- Forest fires within the Arctic circle are increasing.
- 2019 was one of the hottest years on record, wild fires in Portugal and Chile.
- 2017 was the most expensive hurricane season on record, flooding affected millions in South Asia.

## Government

- NIT Rourkela, Odisha - discovered a marine bacterial strain (Citrobacter species) that can produce ethanol directly from fruit waste.

## NGOs-

- Non-State Actor Zone for Climate Action (NAZCA) has been working with UN and has been able to get 12,500 pledges by 2,500 cities, 209 regions and more than 2,100 firms and 500 investors for actions to reduce carbon emissions.

## International-

- Mexico producing plastic and biofuel from cactus
- AI can help fight climate change by monitoring deforestation to designing low-carbon materials.
- NZ is putting climate change at the heart of every decision. The idea is to judge any new policy by how it will affect the planet. Net zero emission by 2050, 1 billion trees by 2028. Banned new offshore oil and gas exploration.
- Whales are vital in the fight against climate change as they store a lot of carbon in their bodies. There is carbon worth about a 1000 trees in 1 whale. It helps phytoplankton grow.
- EU's GHG emissions down by 23% since 1990, GDP up by 62%.
- US cities and states remain committed even after Trump pulled out of the Paris Accord.
- Bologna - incentivises people with beer and ice cream for people who walk, bike or use public transport. The app uses GPS to log credit points.
- Beijing and London - Empowered city mayors and local councils to combat climate change.
- Shenzhen - first city in the world to electrify 100% of its buses. Now it is doing same with taxi fleet (as of now 65% in Jan 2019) bus charging points, subsidies to public transport companies has led to rapid sales growth.
- Karachi's public buses to run on biogas - 3,200 tonnes of dung to be used to run the zero emission Green Bus Rapid Transit (BRT) network. The network has 200 buses fuelled by biomethane.
- Germany has launched the world's first hydrogen powered train. It emits steam and water. It is cheaper to run but expensive to buy.

- Luxembourg to make public transport completely free including trains, trams, buses.
- Transit based development based on metro. However, there is last mile connectivity issue. For this, Netherlands has developed bicycle parking station underneath the Utrecht railway station hub - 6000 bikes.
- Sweden built a road that can charge electric vehicles so that vehicles go long with small batteries.

### Innovations-

- AirCarbon - a polyhydroxyalkanoate (PHA)-based thermoplastic. - High-performance plastic made with carbon captured from emissions; Uses biocatalyst that combines air and methane, reassembles carbon, hydrogen and oxygen molecules into a thermoplastic - makers call AirCarbon.
- Zelfo Technology - engineers cellulosic and ligno-cellulosic fibres from a wide range of sources including industrial, agricultural and horticultural waste streams to impart user specific fibre properties including a high degree of defibrillation. It multiplies the binding capability of the material by a factor of several thousand. It stores carbon at the same time.
- Wooden skyscraper-
  - ◆ Wooden HoHo tower is a hotel, residential and commercial building in Vienna - 84 m and 24 storey.
  - ◆ T3 project in Minneapolis
  - ◆ Sakyamuni Pagoda in China is the oldest wooden building (about 900 years old).
  - ◆ Globally concrete and steel are responsible for 8% and 5% emissions respectively.

### LAND-

#### Government

- Miyawaki method of afforestation in Japan-
  - ◆ Build dense, native forests
  - ◆ Plant growth is 10 times faster + 30 times denser
  - ◆ Planting dozens of native species => maintenance-free after 3 years.
  - ◆ Create such forests in small urban spaces~ 30 sq. feet.
  - ◆ Telangana green drive at Telanganaku Haritha Haaram (TKHH), Khammam is following this method.
- Sustainable approaches to land and forest conservation in Mendha-Lekha village in Maharashtra.
- Van Dhan Yojana by the Rajasthan can be scaled up towards building a green mission to save our non-protected forests (outside the existing national parks and sanctuaries).

- India in green mission-
  - MP planted 66 million trees in 12 hours, 1.5 million volunteers broke the world record at the expense of \$6.2 billion in 2017.
  - Target to increase the forest cover to 95 million hectares by 2030.
  - Kerala-10 million trees planted in the green carpet initiative to promote ecotourism and carbon neutrality.
  - Bengaluru council has developed an App for people to order free saplings.
  - Uttar Pradesh planted 50 millions trees in just 24 hours in 2016.

## NGOs-

Cultural religion in India - guidelines to counter the recklessness in the name of development.

- Hindu Vedic principles of Satya Dharma (moral duty of communities to maintain cosmic natural order); Myth - Krishna punishing the serpent Kalia who polluted the river Yamuna; Mythical mountains Meru and Kailash - centre and axis of the world harbour soil, vegetation and water.
- Sikhism (integrated approach to life and nature).
- Islam and Sufism (tawhid - all things in the world are related to one another and are as aspects of God, valuable and worthy of preservation).

## International

- 300 cities studied in US - areas with more trees had less theft and crimes. Urban crime drops around trees, plants and grass as people are happier, less stressed leads to less aggression which in turn leads to less crimes.
- National parks are worth \$6 trillion to our mental health, creativity, anxiety and depression, sense of belonging, lower anti-social behaviour and workplace productivity; Psychological healing, oils the trees release into the air - kill germs and protect trees from diseases and insects. Doctors in UK are prescribing 'nature' now. Finland, US, Canada have a culture of forest bathing too. Japan has special therapy forests called for forest bathing - where people go to get closer to nature and de-stress to escape the rat race. Reduces blood pressure and heart rate, boosts immunity.
- Afforestation
  - China - building vertical forests that can produce 60 kg O<sub>2</sub> per day. The towers are home to 1100 trees and 2500 plants; They absorb 25 tons of CO<sub>2</sub> a year; Similar forests were made in Milan, Italy in 2014.
  - Great green wall of Africa. Planting began in 2007. The project cost \$2 billion to Senegal. It is already reaping the benefits. It has been able to grow crops in areas previously uncultivated dry land.

- ◆ Italy's Milan has vertical forest. They have planted 3 million trees by 2030 including flat rooftops (total target area is 10 million m<sup>2</sup>), disused railway networks, school courtyards. They purify the air, counter climate change, they absorb 5 million tonnes of CO<sub>2</sub> pa and 3000 tons of PM 10 in 10 years. They reduce the temperature by 2°C; Other cities doing the same globally are Seoul, Athens (protect from flooding and storm surges), Melbourne.
- ◆ Costa Rica almost doubled rainforest area in 1 generation by restricting logging permits; paying land owners who conserve their land; overseas investment at ecotourism and pharmaceuticals lead to both jobs and healthy forests.
- ◆ Kenya airdropping seedballs coated with charcoal to enable germination while preventing animals from eating them.
- ◆ Iceland is planting 3 million trees a year with 10% forest target.
- ◆ Urban forests - Milan's vertical forests - 20000 plants on 2 tower blocks.
- ◆ Senegal has planted 80 million mangrove trees - getting benefits already.
- ◆ Copenhagen is planting fruit trees in street for all to enjoy fruits - parks, playgrounds, churches.
- ◆ Philippines - students have to plant 10 trees before they graduate. Culture - plant a tree when you move to a new phase of life.
- ◆ Drone that plant trees are 150 times more faster than traditional methods; Seeds are put into a pod that is biodegradable and has all the nutrients that the tree needs to grow. Uses automation and digital intelligence that combines the right location and the right species. This data is fed to the drone which follows the path.
- ◆ For more than 100 years Sweden has been planting more trees than it cuts off. Swedish economy is based on environment. Forest is a national resource for the country.
- ◆ France encouraging living walls and opening vegetable gardens in schools.
- ◆ Malawi planting bamboo to fight climate change. It grows quickly, takes only a few years to mature, harvested again and again for 80 years. It absorb carbon well and stops landslides.
- ◆ Trillion tree movement wants to plant that number by 2050.
- Singapore to unvieid an Underground Master Plan in 2019.

### Innovative Ideas-

- Citizens groups like prakriti panchayats - citizen action leading to community governance for environmental conservation.
- Urban landscaping with fruit trees that are irrigated with treated sewage effluent.

- Studies have shown that extra 10% of green space in cities could help compensate for climate change
- Artificial leaf developed by the University of Illinois at Chicago. It can take up to 10 times the CO<sub>2</sub> from air compared to natural leaves and convert them to carbohydrates.

## Waste Management

### Government

- India - NCR - Ghazipur trash mountain - growing 10 m pa and will be taller than Taj Mahal - 40 football fields.
- Kerala Tourism launches app to find nearest toilet.
- Bengaluru - wet waste collected by door to door collection every day. Dry waste twice a week. Mixed waste will either not be accepted or accepted with steep fines. Targets to achieve 100% doortodoor collection and 90% segregation. Idea is to minimise waste @ landfills to 13-15% + zero tolerance for garbage black spots and plastic usage.
- Municipal Corporation in Ambikapur, Chhattisgarh the country's "Garbage Cafe" offers free meals in exchange for plastic or any kind of trash to ragpickers.
- Chennai - the waste is converted into ash and then this ash is used to make colourful tiles and bricks. It started as a pilot project at a city landfill.
- India has banned all forms of disposable plastic in NCR.
- Odisha to reward people returning plastic bottles.
- India has been making roads out of recycled plastic. Consequently, pollution has been reduced, jobs have been created. Waste-pickers collect plastic litter, shredded in machine subsidized by government and is sold to builders; Roads thus made are more durable in floods and extreme heat; India has made 33600 km roads out of plastic. Eg. Chennai's Jambulingam street is one of the 1st. 1 km road uses 1 million plastic bags, saves 1 tonne of asphalt and costs 8% less.

### NGOs-

- Afroz Shah from Mumbai led waste clean up to stop plastic from going into oceans and rivers. He organised the world's biggest beach clean-up in Mumbai in 2015. He transformed Versova beach from 5 feet high waste pile up to renewed turtle hatching site. Now he is focusing on the 17 km of Mithi river. He is mobilising 2 million living around it.
- Plastic - Panch rupaiye mein dharti bachao - helped reduce the use of plastic bags in Muktsar, Punjab by half in a year. Selling cloth bags for ₹ 5 - Dr. Seema Goyal and a team of 4 went to veggie markets, langar plates and dairies; They also used social media - Facebook and YouTube

- Hair used by start-up "matter of trust" to clean up oil spills. Woven into mats. Catchment cages of storm water drains to be lined with these mats to absorb oil that rainwater collects from the streets.
- Recycling - Jodhpur firm Priti International turns junk (old trucks, cars, bicycles and various machines) into tables, chairs, wine racks. Jodhpur has a big defence installation and a military auction house. The firm purchases old trucks and machines auctioned there (A good example of location of industries).
- *HelpUsGreen*:
  - Collects flowers from temples and mosques and recycles to natural incense, organic fertilizers and biodegradable packaging material.
  - 1,260 women in UP work in this initiative who used to be manual scavengers.
  - Provides livelihood to total of 5,100 women and recycles 51 tonnes of temple waste daily by 2021.
  - Preventing chemical pesticides from entering the rivers with temple waste.
  - World's first profitable solution to the temple waste problem.

## International

- Operation Straw - a group of Australian divers dive to fish for straw. They call it strawkling - snorkelling for straw, plastic bags, fishing gear.
- Denmark - You can go boating for free if you pick up floating trash. You are given boat, vest, trash picker and can by GreenKayak; Similar initiatives are being taken in Norway, Germany, Ireland.
- Germany has converted exhausted open cast mines in lakes with beaches and camp-sites in Lusatia, Saxony and Brandenburg; Old giant excavators are now part of open air Ferropolis (Iron City) museum.
- New York reinventing the milkman to reduce the plastic waste problem. You order shampoo, milk, cereal etc. They are delivered at doorstep. You give empty containers which are reused. 90% of the plastic doesn't get recycled. Loop is the start-up running this business and is a partnership of several global brands. Novelty-shifts the responsibility for packaging's after-life from customer to companies. The company is required to collect the used containers.
- Tokyo Olympics - will be a 100% renewable energy event, turning old phones into medals, 99% of the other goods used in the games will be reused or recycled, driverless taxis for guests, robots across venues giving foreign language support and carrying bags for needy, athletes' village plaza is built from reusable timber - will be dismantled after games and will be used again. Japan will offset all the carbon emissions caused by the games, podiums will be made of recycled plastic. Torches made from Fukushima earthquake, medals from recycled e-waste, all raw materials have been sustainably sourced.

- Germany now reuses half of all used clothing. Start-ups are encouraging renting and not buying.
- Global food wastage is the third largest green house gas emitter as a country in country rankings. A British pub serves beer out of discarded toast is helping tackle food waste.
- UK - more and more people are buying second hand clothes; exporting too.
- In Rome we can pay metro train tickets with plastic bottles.
- EU wants to introduce one charger that works for every phone thus reducing e-waste; but abrupt shifting might cause more waste too. Hence it should be done slowly.
- Classrooms made out of plastic waste in Ivory coast - by making bricks out of plastic. These rooms are fire retardant and water proof, do not require any cement or sand. Students of Graphics era university developed a car C-zero. The body is made out of papers, weighs only 35 kg, costs 90% less and does 108 km/ KWh.
- Toronto, New York City, Los Angeles are turning food waste into fuel. Garbage trucks collect food scraps which are subjected to anaerobic digestion. This is used to extract renewable energy in the form of natural gas that is used to fuel the trucks themselves, homes, businesses.
- Sweden has a shopping mall for recycled products. You bring in products for restoring, they repair and sell it. The idea has been adopted from India's jugaad and repair culture.
- Biodegradable plates made of wheat bran. They degrade in 30 days.
- In Mexico waste from food processing is being turned into bioplastic.
  - Waste from Avocado is being converted into straws and cutlery.
  - Waste from Sugarcane and Corn starch into bags and containers.
- Innovative climate change summit by Marshall Islands - entirely online => carbon neutral.
- Curitiba city in Brazil has been recycling via generations and reduced mosquito-borne diseases by 99%.
- Refuse derived fuel can be used to convert ash to bricks and energy and water.
- Plastic-
  - German city of Freiburg - you buy a cup but lease it for 1 Euro, which is refunded on returning. Similar model is followed in Norway.
  - Plastic banks in Haiti, Brazil and Philippines to collect plastic garbage.
  - Switzerland - you have to pay to throw the trash away if the trash is not segregated at source - more effective than taxing.

- ◆ Plastic eating fungus in Pakistan. It breaks down non-biodegradable plastics in weeks - *Aspergillus tubingensis* - rubbish dump in Islamabad - usually found in soil; live on plastic surface - breaks down bonds b/w molecules; 2014 - we made 311 mt of plastic.
- ◆ In Indonesian city of Surabaya people can pay for bus and movie tickets with plastic bottles, In Beijing, people can use plastic bottles to pay for his subway tickets.
- ◆ Norway has developed reverse vending machines where you can put in plastic bottles and get money.
- ◆ Iconic polo T-shirt has been re-made entirely of recycled plastic bottles. It is dyed by a process that uses zero water. It's called Earth Polo.
- ◆ Plastic recycling by turning it into ropes, robes (monks in Thailand) and bricks.
- ◆ Waxworms caterpillars can degrade plastic found recently. We produce 80 mt of polyethylene plastics a year globally, 150 mt single use.
- ◆ Portuguese airline Hi Fly conducted a test flight without a single piece of single-use plastic item on-board. The flight was from Lisbon to Natale, Brazil – no plastic cups, no plastic silverware, no plastic cocktail stirrers and no plastic containers.
- ◆ Company TerraCycle collects and reuses, recycles and upcycles waste. Its free recycling programs are sponsored by brands, manufacturers and retailers. The collection points have been set up at homes, schools, offices. Courier collection service also provided. It recycles industrial waste. It gives out shipping labels for free as part of courier collection services.
- ◆ Alliance to End Plastic Waste (AEPW) is an alliance of 30 Global companies which has invested \$1 billion and plans to eliminate plastic waste.

### Innovative Ideas

- Five sizes, five years - 'shoes that grow' can be adjust to expand by 5 sizes and designed to last 5 years thus reducing wastage invented by Kenton Lee.
- Start-up 'leaf republic' - large scale disposable and waterproof leaf plates - learning from the patta tradition of India.
- Spill Waste Problem - dustbin fitted with an ultra sonic sensor, LED and buzzer. Lights show the filled capacity and the light turns red when full. Adding a system for remote checking of capacity of the bins utilized.
- Recycled High Density Composite Polymer floor tiles. These tiles crafted out of plastic waste such as polybags, chips packets, plastic bottles, bottle caps. They are weather resistant, chip resistant, durable and better structural stability, cheaper.

- Larvicultural cakes that can attract and kill mosquitoes built from cigarette butts. These cakes use nicotine. Its toxicity can kill the mosquitoes and their larvae and the leftover cake can be used as fertilizers.
- An Indonesian start-up has developed Edible packaging material. The bottles are made of algae jelly. They are chilled in a bottle-shaped mould and it needs liquid to hold the shape. It decomposes as soon as it gets empty so you can even eat it or dump it.
- We can increase price of products sold in non-recycled/non-recyclable packaging (10%) and vice versa. We can raise tax on trash going to landfill and reduce on recycling plants.
- Bill and Melinda Gates Foundation.
  - reinvented toilet and attached an omni processor waste treatment plant with it. They can be used in small towns in a cluster approach (2/3 families can together to share treatment plant).
  - pledged \$200 million to incubate new technologies to scale up sanitation.
- Plastic-
  - Bioplastics
  - Ecohike-t-shirts made out of recycled plastic PET bottles.
  - Bioplastic made from fishing waste-fish scales and algae. Does not pollute, is stronger than standard plastic, can be used for variety packaging, edible, solves waste problem.
  - Recycled plastic can be used to make flash graphene. R&D by Rice University charging up high voltage capacitors with electricity then unleashing it all at once onto any carbon-containing material like coal, plastic, food waste; current passes through target material. Thus, heating it to 3000K and breaking every C2C bond in the process. Non-carbon elements sublime out while the C atoms rearrange themselves as graphene, excess energy is dispersed as light thus forming flash graphene. Change can take place in 10 ms, quick, cheap; produces turbostratic graphene. The layers are not in ordered alignment. The layers can be separated using solvents but as of now only makes small flakes and not large sheets. This can be used in concrete as well and could boost cement strength.
  - Adidas making shoes out of recycled plastic.
  - Filling and heating thermoplastic to repair the potholes of a road.
  - MIT has developed a way of turning plastic into super strong concrete that is 15% stronger than normal. Making concrete produces about 4.5% of world's CO<sub>2</sub> emission. Flakes of plastic subjected to small amount of radiation and then crushed and mixed with cement paste and flyash.
  - UK has banned microbeads in cosmetics.

- ◆ Kwinana city, Australia is using giant plastic nets to trap wastes in drains and let's water filter through.
- ◆ Start-up called Bamboo House India in Hyderabad-
  - is developing plastic tiles for paving at the cost of 600 bags/tile; Thus the tiles costing less than < \$1 each
  - House made of plastic provides good insulation in summer and winter thus saving on heating and cooling costs.
- ◆ Drinking water fountains to reduce demand of use and throw plastic water bottles.
- ◆ Manchester University has developed Graphene sieve. It uses oxidised membrane with tiny holes to filter and turn sea water into potable water. UN says 1.8 billion will suffer from water scarcity in 2025.

## WATER

### Govt.

- Best practices of decentralised planning of Hiware Bazar, Maharashtra.
- Swajal model of community based drinking water in Uttarakhand.
- Local approaches to developing infrastructure for storage of water-
  - ◆ Dewas model by M.P. Government for rehabilitation of farm ponds. It gave support to build ponds for storage and supply to farms. This lead to a 6 to 40 m rise in the water table; 120-190% rise in irrigated area.
- Gureh village, Banda district 5 pronged plan-
  - ◆ Kuan Talab Jiao Abhiyan - Drafted men to clean silt and debris to revive wells; water showed up even before an ancient well was fully cleaned.
  - ◆ Dig ponds and sell top-soil.
  - ◆ Wealthy non-resident villagers have funded digging ponds.
  - ◆ MGNREGA - ponds planned based on analysis of catchment area, study of inlet and outlets and storage.
  - ◆ Apna Talab Abhiyan.
- Mission Kakatiya in Telangana - restoration of irrigation tanks and lakes/minor irrigation sources built by the Kakatiya dynasty.
- Bengaluru working on reclaiming Kundalahalli lake (once a landfill) by CSR funds in a PPP model.
- Haryana - paddy farmers requested to switch to maize and told that the government would procure it and give a ₹2,000 per acre subsidy. Resulting in 18,000 hectares of land transferred from paddy cultivation to maize.
- Maharashtra - Seeing sugarcane cultivation is the largest water guzzler - so no sugarcane could be grown without precision drip irrigation. This has led to a saving 75% of water required in cultivation.

- Mansa district Punjab is using soak pits to store, clean water and recharge groundwater.
- Ice stupa artificial glacier by Sonam Wangchuk to save water in winter and use it till late spring (July).
- Water management model of Surat
- Jal Bachao, Video Banao, Puraskar Pao contest: MoWR, RD & GR.
- Thenmala dam has been made 70 km from Munroe Thuruthu, Kollam, Kerala in the 1960s for the Kallada Irrigation Project. It blocked the flow of fresh water and sediments from the Kallada river which has been determinantal to land's fertility. As a result, whole area has turned saline.
- Best practices of decentralised planning of Hiware Bazar, Maharashtra.
- Uttarakhand - Swajal model of community based drinking water management.

### NGOs-

- Water crisis in TN lead to clashes erupt in Chennai, which in turn IT firms cutting down operations. This shows how environmental destruction and ensuing crisis can threaten the very economic growth in the name of which environment was polluted in the first place.
- Swachhagrahis - Army of grassroots motivators on water conservation and sanitation.
- Bill Gates promoted fund has developed solar panels that can make water out of air and sunlight. Each one of these panels can produce 10 lt. of water per day.
- Solar panels that can make water out of air by Zero Mass Water Inc.
- Laporia village in Rajasthan did not have a single drop of water 40 years ago. Laxman Singh started working on water harvesting and groundwater recharge. Today, Laporia is water secure.
- Even Chennai droughts Sriperumbudur - Oragadam belt - companies and manufacturing units maintained production due to efficient water management practices. Rain Water Harvesting pond and all buildings have artificial groundwater recharge.
- Start-up ocean cleanup's fleet of solar powered interceptors to clean rivers.

### International

- Israel treats 100% and recycles 94% and this meets 50% of irrigation needs.
- Israeli start-up has developed AI algorithm to detect leakages thus helps in conserving water and preventing damage in commercial and government buildings.
- Peace ambassadors' appointed by UN have helped ease water conflicts in Kenya. They teach villagers about sustainable farming and how to share resources thus reducing wastage and using water efficiently.

- In Cape Town, South Africa water saving is being driven through the concepts such as Day Zero and prompting better and more efficient use of water.
- In China sponge cities (like Hebi City has earmarked a pilot area 30 km<sup>2</sup> for sponge city construction) are being developed to protect against flooding. Architects are turning cities into giant sponges. The city absorbs rainwater and stop floods; China, Russia, Indonesia, US-gardens, restoring wetlands, riverbanks, sponge cities, Porous asphalt permeable pavements, green walls, green buildings, underground tanks and tunnels; floods have increased by four times since 1980s; Only about 20-30% rainwater infiltrates in urban areas.
- In Mexico city new executive position of a "resilience officer" has been appointed to save its sinking urban sprawls.
- Warka water in Ethiopia.
- Bangkok's innovative park stores 3.8 million litres of flood water in tanks underneath it and uses it for 20 days of watering.
- Palau island nation in Pacific makes tourists pledge (stamped on passport) to protect the environment. It has turned most of its waters into a marine sanctuary. The idea is to tread lightly, act kindly, explore mindfully and banned tourists from taking marine animals as souvenirs, cannot damage or touch the coral.
- Singapore has developed a water treatment system which has reservoirs and 2/3rd of the city-state's surface area is the catchment areas of the treatment.

### Innovative Ideas-

- Smart water pump switch - This device will function to "Switch on" the water pump when the tank is empty and "Switch off" when the tank is full.
- Smart water dispensor - allows you to set how much water they need, the device then automatically stops the tap or motor once the water is dispensed.
- Local underground grey water treatment plant - then use the water for fountains to cool the area and the local irrigation.
- Papyrus grass is planted in bio fizzes and then it is soaked down in the water. They biofilter the water by nutrient uptake thus improve the water quality even more.

## WILDLIFE

### Govt.

- Animal underpasses on Maharashtra highways have become a life saver for tigers and they are turning out to be regular users on NH 44 - Tiger T1 used pass 9 atleast twice in March to May.
- WCCB has launched a scheme to enroll willing persons as WCCB Volunteers.
- Wildlife Crime Database Management System by WCCB has developed an online system to get real time data and analyze trends in crime, devise effective measures for helping put in preventive measures and carrying out operations.

## International

- Eastern seaboard of USA is a dead zone for sealife; It has become four times now compared to 1950 due to human actions due to chemical runoff from agriculture and climate change. This has led to migration of fish to other areas. Solution is to cut fossil fuel use, water pollution, create protected areas for fish avoiding dead zones, track and predict future dead zones.
- Thames river was a dead zone and was resurrected.
- Nepal is the first country to double its tiger population. It used local communities to look after forests and to report and check illegal activity. They also used drone to monitor trafficking routes and turned 25% of land into conservation reserves.
- Jamaica - divers are growing baby corals in underwater nursery and when they become the size of hand they bind it to a rocky outcrop. Then the coral attaches itself and grows into a new reef. Corals cover 0.1% of the ocean floor, but support 25% of the marine life.
- Dutch city of Utrecht covered hundreds of bus stops with green roofs, turning bus stops into bee stops.
- Dutch engineers build artificial islands to bring wildlife back to an archipelago of 5 islets. It attracted greylag goose, common tern and several species of waders.
- Israel has developed a state of the art centralised water management system and desalination plants. They use waste water for farming.
- Galapagos island bans noisy fireworks in a move to protect unique wildlife.
- French tech company Sigfox developed a bite-size tracker that can be inserted on the horns of rhinos to monitor and protect the endangered species.

## NGOs-

- World Animal Protection has launched Global Ghost Gear Initiative (GGGI) to collect ghost fishing gear from oceans all over the world.

## Innovative ideas-

- Dr. David Vaughan's technique of micro-fragmentation to grow coral. Fragments of a coral grow to the original size within weeks. The plan is to plant 1 lakh corals in florida.
- LED lights in nets to scare off by catch marine creatures like turtles but fish aren't put off.

## Fundamental Rights

### Examples-

#### Good-

- Upholding right to speech-
  - Chakyar Koothu, Ottan Thullal art forms satire is the dominant idiom

- Nehru asked Kesava Sankar Pillai the pioneer of the Indian political cartoons not to spare him in his work-done!!

## Bad-

- Denying fundamental rights
  - Journalist Prashant Kanojia was arrested by UP Police for sharing on Twitter a video pertaining to CM Yogi Adityanath.
  - Kerala Lalit Kala Akademi was asked by the state government to review its decision to award a cartoonist due to objections from a section of Christian clergy. This issue is regarding a cartoon on Father Fraco Mulakkal, accused of rape. The cartoon targeted only the person not values, institution or religion.

## Governance

### Examples-

- Greater Bengaluru Governance Bill, 2018-
  - Expert Committee has been made for Bruhat Bengaluru Mahanagara Palike Restructuring.
  - Greater Bengaluru Authority headed by a directly elected Mayor has been made for planning of Greater Bengaluru.
  - Powers for interagency coordination and administration of major infrastructural projects has been given to the Greater Bengaluru Authority in Urban local bodies area.
- Back to the Village of Jammu and Kashmir – 4500 officers from PS to entry level gazetted officers will visit every panchayat, stay overnight and listen to people's grievances and needs, also participate in various activities - energizing panchayats, feedback on delivery of government schemes, capturing specific economic potential, and undertaking assessment of village needs.
- Online portal ~ “Grievance Against Misleading Advertisements” (GAMA) where complaints relating to misleading advertisements can be lodged.
- #Self4Society app by PMO for Corporate professionals wanna do volunteer work.
- Nirmala Sitharaman to crowdsource ideas for her first budget as Finance Minister - inclusive and participatory governance.
- In Maharashtra citizens seeking data from the government under RTI can stop by concerned office on Monday afternoons and study files.
- Experiment on Universal Basic Income in Madhya Pradesh with SEWA. This model shows improvement in nutrition, sanitation, health and health care, school attendance and performance, women's status and well-being, position of disabled and vulnerable groups.

- Assam-

- Only state in India with Citizens Budget presented in public domain.
- Only government conducts budget awareness campaigns across 17 districts.

### NGOs-

- Dainik Bhaskar is promoting "SDG chaupals" in Indian villages.
- National Campaign for People's Right to Information filed an appeal with the central information commission about more than > 23,500 pending appeals, complaints, sought filling up of vacancies.

### International

- Local Self Governance in U.K. - 'City Deals' - agreement between central government and city economic region. This has been modelled in 'competition policy style' approach. The city economic region has been represented by a 'combined authority' under a statutory body set up through national legislation. A group of councils collaborate decisions and is steered by a directly elected Mayor. The idea is to further democratise and incentivise local authorities to collaborate and reduce fragmented governance, drive economic prosperity, job growth, etc. 'City Deals' move from budget silos and promote 'economic growth budget' across regions. U.K. has established 9 such combined authorities.
- Nigeria sent a delegation to study Swachh Bharat Mission - 4 pillars of success - political leadership, public financing, partnerships and people's participation.
- How UK reduced smoking - from 80% in 1940s to just 15%
  - Banned smoking in public places
  - Plain packaging and health warnings
  - Services to help people quit
  - Future - sanction on tobacco companies and services targeting specific groups like teenagers and construction workers, etc.
- Germany integrated 4 lakh refugees in the job market
- Japanese Tsukuba city works with scientists to make laws - policy based on evidence and scientific background - mobility robots (dedicated experimental street), blockchain voting, leading in algal biomass energy, nanotechnology.
- GiveDirectly handed \$1000 to 10500 homes in rural villages in Kenya. People in neighbouring villages benefited too. \$1 give => \$2.6 in additional spending and income. This exercise led to 0.1% inflation only; It also lead to rise in permanent assets and per month spend even after 3 years.
- Denmark's "Festival of Politics" works to deepen democracy where every leader comes and people challenge them in an informal setting; It is conducted in a remote island away from capital.

- New Zealand has embarked to transform politics to focus on kindness, empathy and well-being. Well being budget has been initiated where ministers who want to spend money will have to prove that their initiative will improve inter-generational well being - focus on societal not just economic well being.

## Health

### Examples-

### Government-

- Maharashtra Health Dept. has launched a scheme to appoint specialists in rural areas, offering contracts with performance based cash incentives.
- Mother's milk banks have come up at government hospitals in Maharashtra.
- Odisha success in reducing malaria - efforts by government, political and bureaucrats.
- Accredited Social Health Activists - worked on the following heads
  - ◆ Swachh Bharat Mission
  - ◆ Trained ASHA in EDCT using rapid diagnostic kits - incentive of ₹ 75 per positive test reported
  - ◆ DAMAN initiative - controlling malaria in remote locations - mass screening camps - twice a year + entire population screened
  - ◆ Indoor residual spray - residual insecticide is applied to inner walls and ceilings of houses
  - ◆ 1.1 cr long lasting insecticide nets - ASHA explained people how to use the nets
- Chhattisgarh and Assam
  - ◆ 3 year trained physician are called LMPs (Licentiate Medical Practitioners). They have been given training to handle basic public health issues in rural areas.
  - ◆ Public health practitioners to address infectious diseases and public health requirements of the rural poor.
- IIT Delhi developed Naso filters. These can be worn in the nose to filter out particulate matter in the air we breathe. They can be used for about 10 hours and are available for ₹ 10 per piece.
- Healthcamps run by Karnataka government.
- Telemedicine for OPD care patients in UP by docs in Andhra.
- Maharashtra - animal drug stores to stop selling antibiotics to farmers without prescription.
- Odisha's per capita income is lower than that of Gujarat but has a better nutritional status due to

- Better network of ICDS
- Public health facility/workforce per lakh population
- Educational attainment in women
- Delhi government - Zero Fatality Corridor
- Odisha vs. Haryana - malnutrition in Haryana's (34% stunting and 29.5% underweight) agriculturally-developed districts like Karnal, Panipat, Sonipat, Rohtak, Gurugram is higher than average of Odisha.
- Indian Air Force has launched a mobile health app to provide health information to the users, including first-aid and other health and nutritional topics.
- Loo Review campaign under Swachh Bharat Mission by MoHUA and Google.
  - Locating Public Toilets on G-maps.
  - To encourage all local guides in India to rate and review public toilets on Google Maps.
  - 500+ cities in India; More than 30,000 toilets named SBM Toilet are live.
  - Awareness and ease of locating public toilets across India.

## International

- Hospital ship of Bangladesh - using waterways to access and serve remote areas
- Ebola experience of Sierra Leone and Liberia have taught us that not big hospitals but strengthening community health is the key to contain epidemic.
- Spain has the highest organ donation rate 47/ million. They have an opt out system rather than opt in system (idea developed from the concept of behavioural economics).
- Portugal decriminalised drug use and possession in 2001.
  - lowest rate of drug-related social costs of death and crime in EU.
  - redeployed the investment for enforcement to the support of addicts.
- Thai model of state health insurance coverage reduced out of pocket expenditure spending down to 18%.
- West Africa's 2013 Ebola virus outbreak and Latin America's 2015 Zika outbreak have shown that proactive sharing of data can help. During the Ebola epidemic 80% of the epidemiological modelling studies used only open data.
- Bridge courses world over to practitioners to deliver primary health-care service at grassroot level.
  - US - Physician Assistant-paramedics, nurses
  - UK - Physician Associate - 2 years training
  - NZ - centre for rural health development - Physician Assistant in clinical role

- China - Associate doctors
- South Africa - clinical associate
- Bangladesh - 3 year training - 89% health@ rural (SACMO)
- Malaysia - Associate medical officer
- University of New Mexico - ECHO model - Extension for community health outcomes.

## NGOs-

- Shraddha Rehab. Foundation where psychiatrist Bharat Vatwani who works for mentally ill street people in Mumbai.
- SNEHA Chennai based suicide prevention hotline saves more than 1 lakh a year.
- NGO working for TB patients
  - TB Mukt Vahini-Bihar
  - Stop TB Partnership, Geneva
  - Global Coalition of TB Activists; Rainbow TB Forum, Tamil Nadu
  - Journalists against TB, Bengaluru
  - Doctors w/o borders
  - Microsoft India, NITI Aayog pact for AI tools in healthcare - Healthcare screening models to screen patients at Primary Health Centres.

## INTERNATIONAL RELATIONS

### Examples

**GANDHI'S GLOBAL FOOTPRINT**

The Indian independence movement may have witnessed the heyday of Gandhian non-violent action, but the ripples it left behind touched many other nations and influenced varied ideologies. Here's a snapshot of Gandhi's global impact



Gandhian non-violence was already invoked during his lifetime by Khan Abdul Gaffar Khan, also known as the 'Frontier Gandhi'. Few people know about Khan Abdul Gaffar Khan as a Muslim proponent of non-violence, who stressed the compatibility of Islam and Satyagraha



Often labelled as the 'American Gandhi', Dr. Martin Luther King, Jr. recognized the value of Gandhi's legacy of non-violence and used it to strengthen his own campaigns in areas ranging from racial integration to voting rights



Effective non-violent actions led by Nelson Mandela played a crucial role in crippling the brutal and racist apartheid regime in South Africa, helping establish a legitimate, democratically elected black majority government



The non-violent Arab Spring awakenings in West Asia from 2009 to 2012 demonstrated that Gandhian non-violence could help to provide the disobedient space that is needed

- Non - violent uprisings in Serbia, Ukraine, Georgia, Myanmar, Iran, the Palestinian Territories, Egypt, and Tunisia.

- Protectionism - Canada wants to take in 1 million immigrants in next 3 years ~ 1% of population - 2036 dependency ratio of 2.
- Football-
  - 10% world cup footballers are migrants
  - 30%, 62%, 90% respectively in teams of Portugal, Morocco, Belgium.
  - Swiss team has 30% and the coach says cultural diversity is the reason for success.
- Rehabilitation of Refugee rehab-
  - Lego Foundation and Sesame street has invested in Syria and Rohingyas entertainment in "play labs". The labs teaches to read and write by using toys, games and videos. They help how to manage stress of displacement. They help to reduce trauma (50% of 68.5 million refugee-kids).
  - Za'atari Project has painted murals on wall around camp.
  - Exile Voices has been teaching Syrian kids and trains them in photography.
  - Germany has been training refugees to become train drivers. It has till yet integrate 1 million displaced people.

## Justice

- Nagaland Tourist Police ensures safety and security of tourists and report crime to the nearest police station. The police has set up an Integrated Police Control Room for tourists.

## Media

- Virus movie dealing with deadly Nipah virus outbreak in Kerala
  - How to deal with adversity using public knowledge + workforce.
  - Role played by the local media in preventing panic and disseminating information.
  - State machinery - defence to tackle grave situation.
  - Meticulous planning by many individuals.
  - Women were key players under the leadership of K. K. Shailaja, Kerala's Minister of Health and Social Welfare.
- *Kabir Singh* - a movie that glorifies toxic masculinity, intimidation of women and sense of entitlement which some men have given themselves. It glorifies stalking and even ownership of women by men; so did *Dabangg* and *Tere Naam*.
- *Kumbalangi Nights* - story of 4 unsuccessful oddballs and women in their lives that creates a nurturing loving community of love.
- Social media platform Instagram has induced an AI powered prompt to reconsider offensive language offers online abusers a shot at redemption.

Feature restrict allows users a degree of control over their terms of engagement with their abusers.

- Movies - stereotypical dalits - powerless, wretched and dependent on morality of social elites - Bandit queen, Lagaan, Aarakshan; complex characters - Newton, Rajneeti, Sonchariya, Masaan
- Rumours' effect - Alimuddin Ansari, Dadarao Bhosale, Nilotpal Das, Tribal Madhu - lynched on rumours.

### Debunking fake news-

- Altnews.in - video showing a Hindu girl being attacked by a Muslim mob 2 year-old clip from Guatemala.
- SM Hoax Slayer - WhatsApp forward of the Indian flag flying atop the Israeli Parliament was fake.
- Check4Spam.com - digital rumours of 200 child kidnappers having arrived in Bangalore.
- Facebook has given 10 easy tips and a "forward" warning as way of identify rumours.
- Poynter's International Fact Checking Code of Principles to be able to detect fake news.
- Spot fake news on the internet - head of Wikimedia - few handy guidelines-
  - If there are too many adjectives in a sentence - chances are the author is trying to convince you of something
  - Read more critically - check the citations
  - Is the source reliable - who published it, when and why? what incentive do they have?

### International-

- Sri Lanka enacted a Law on fake news: Sentencing 5 years in prison for fake news and hate speech.

### Law And Order

#### Government-

- Cop connect app by Telangana police. It is basically a whatsapp for police
- Partnership between sex workers and anti-human trafficking units to root out exploitative practices
  - Success stories at country's largest red-light district of Sonagachi in West Bengal. Self-regulatory body of sex workers since 2001 has been tracking entry of minors and has helped in identifying traffickers.

- Model has been emulated in Sangli in Maharashtra and has helped anti-human trafficking unit and workers to rescue minors and prevent trafficking.
- Telegram group called National Police Group has been made only for constables, head constables, Assistant Sub-Inspectors, Sub-Inspectors, and Inspectors from 28 states to help crack cases by information sharing and informal level cooperation.

### International examples-

- Scotland - Glasgow - most violent city in the developed world - police realized the reasons.
  - poverty, inequality, toxic masculinity, alcohol abuse.
  - treated violence as health problem like obesity and smoking; City enlisted social workers and doctors and staff to work on defusing tensions, stopping revenge attacks and offering therapy, educated children about knife crimes, helped violent offenders get jobs, housing, education on leaving prisons.

### NGOs-

- Shakti Vahini, a Delhi-based NGO that resulted in the landmark Khap Panchayat case
- Utthan - a trafficking survivors' collective groups
- Lawyers Collective - NGO working on human rights issues
- Common Cause filed a PIL in Madras High court, resulted in the judgment mandating one day week holiday for all police officers
- Amnesty International working in the domain of Prison reforms
- Sex workers' group-VAMP (Veshya Anyay Mukti Parishad) + NGO Sangram conducted a study called Raids from 2005 and 2017.
  - They traced the lives of 243 released "rescued" women
  - 79% or 193 stated at the time of raid that they were in sex work voluntarily and did not want to be 'rescued'.

## Poverty Alleviation And Welfare

### Financial Inclusion

- Kenya model of digital empowerment - M-Pesa mobile money service
  - Can be used to store monetary value on phones and transfer via SMS
  - This financial inclusion uplifted 2% of Kenya's households out of poverty
  - Female beneficiaries have benefitted in social, economic spheres
  - This has also brought about savings behaviour
  - This has altered occupational choices from subsistence agriculture and multiple part-time jobs to business ownership
  - Direct access to remittances through M-Pesa and hence increased agency

**NGOs-**

- Nirman Kusuma programme in ODISHA gave financial support to children of construction workers, trained them in ITIs and polytechnics
- Timbaktu Collective of Telangana ensured decent livelihoods for tribals by promoting their craft through small scale manufacturing.
- Kudumbashree (Kerala) has worked on skill training and poverty eradication of women.
- In Yelagiri hills, Tamil Nadu MAHALIR MANDRAN POONGANUR has been maintaining a tourist spot.
- SEWA, Lizzat papad has helped in promoting entrepreneurial culture among women.
- Tamil Nadu SHGs helped inculcate sanitation habits among the community people.

**Sport****NGOs-**

- Sports: A way of life has filed a PIL to make sports a fundamental right - 21A, DPSP and FD

**Society****Examples-****Govt.-**

- Scheduled Castes - Gobindpura village (1/144 total) Nabha Tehsil Patiala district ended separate cremation grounds for Scheduled Castes; former MP used carrot and stick approach using MPLAD funds for villages for renovation of cremation grounds. Now members of all communities attend funerals together.
- Drug Abuse - Excise Department of Kerala has launched a mission to fight drugs grassroots by forming a Vimukthi Sena of young volunteers 18-40 years at the ward-level. Kerala State Mission for Deaddiction has launched awareness campaigns against alcoholism and drug abuse.
- LGBTQ - NALSA campaigned for the transgenders right to be called the third gender, separate from male and female and seek legal, political and economic rights, and remedy against discrimination.

**NGOs and Non-Government examples-**

- In tolerance
  - Muslim Manganiar folk singers singing songs of exquisite beauty to Krishna - they follow Islam but they sing Hindu devotional songs

- ◆ Akhil Bharatiya Marathi Sahitya Sammelan (All India Marathi Literary Meet)- Nayantara Sahgal speech for Marathi Sahitya Sammelan: 'In some cases, it's our duty to hurt sentiments'. She got uninvited.
- ◆ Wendy Doniger's book The Hindus: An Alternative History - withdrawn from circulation.
- ◆ A.K. Ramanujan's essay 'Three Hundred Ramayanas' - dropped from a Delhi University syllabus.
- ◆ Perumal Murugan's book Madhorubagan (One Part Woman) - withdrawn by author but resurrected by Madras HC.
- ◆ Manipur law passed a law to prevent mob lynching.
- ◆ SC gives an 11-point prescription: Preventive, remedial and punitive steps
- Loyalty to Muslims to the country for when extremists question-
  - ◆ Brigadier Mohammad Usman (Dogra Regiment) was highest-ranking officer killed in the India-Pakistan War of 1947-48.
  - ◆ Havildar Abdul Hamid (Grenadier Regiment) - destroyed Pakistani tanks in the battle of Khem Karan. This was the most decisive encounter of the 1965 India-Pakistan war.
  - ◆ Captain Haneefuddin (Rajputana Rifles) was killed at 18,500 ft. during the Kargil conflict in 1999 when he led the eviction of enemy from a strategic position.
- Racism-
  - ◆ Turkish-origin footballer quits German team due to racism.
  - ◆ A RBI board member said Kerala flood is wrath of God for allowing women entry in Sabarimala.
- Messages being spread on social media warning people against contributing on CMDRF as the money might go to minorities and invite the wrath of God.
- Tribals - Jiban Sampark Project of Odisha working for welfare of PVTGs; in association with UNICEF. Awareness amongst the PVTGs about their rights.
- Casteism-
  - ◆ Dalits of Hulikal village in Arkalgud taluk travel about 8 km to get a shave or a haircut.
  - ◆ National Campaign Against Mob Lynching (NCAML) has been campaigning for a law against mob lynching.
  - ◆ Sangham Radio - India's first community radio experiment run by Dalit women.
  - ◆ Rashtriya Dalit Adhikar Manch - Azadi Kooch after Una flogging.
  - ◆ Rashtriya Garima Abhiyan + MoSJE - manual scavenging census.
  - ◆ Veerammal

- Founded Annai Ashram.
- Started a school for Dalit girls in 1950s near Tiruchi. It conducted classes up to 12th standard.
- Started an ITI; Children's home
- Kandan was from small village of Vanjinagaram, Melur in Tamil Nadu
  - Took on caste oppression
  - Led a movement to draw water from public well and pressed for rights.
  - 1987 - Kandan was hacked to death.
- Bhasha Mukherjee crowned Miss England in 2019 rather than being brand ambassador for various causes for global organisations; leaving her crown behind to go back to work as a doctor and help during the Covid-19 crisis.
- LGBTQ
  - Right wing opposition to Deepa Mehta's Fire on the topic of lesbian love 1998.
  - Puttaswamy case on Privacy focused preservation of personal intimacies, the sanctity of family life, marriage, procreation, the home and sexual orientation, right to be left alone.

### International examples-

- Loneliness - Sidewalk talks are being done in 12 countries and 40 cities where volunteers often trained psychiatrists listen to you and make you feel valuable.
- Tolerance - studies on US expats shown that having close friends from different cultures gives us cognitive flexibility, makes us more entrepreneurial and enables us to develop different perspectives and innovative ideas.
- LGBTQ
  - Ireland legalised same sex marriage - first country globally to do so.
  - Naz foundation's Navtej Singh Johar case litigated in Supreme Court for striking down Section 377.
- Senior Citizens-
  - Living libraries of Malaysia are where young visit and learn from the old in retirement homes.
  - Japan has combined kindergarten with aged care homes for elderly. It reduces pace of mental decline of elderly, reduce blood pressure, risk of disease, stress, loneliness and boredom. Children are less likely to be ageist as they grow up. They encourage interaction between generations.
  - China's universities for the elderly are blooming. Reading 30 minutes a day can help live 20 months more.
  - UK has appointed Minister for loneliness.
  - In Italy young are moving in with the old so that they can get affordable housing and company.

- Homeless in Dublin are being trained as tour guides, in arts of creative writing, storytelling, etc. They get 50% of the ticket and the rest invested in scheme.
- New Zealand is measuring its success by the well being of its people and economic growth. Public investment in budget 2019 focused on quality of life - mental health, domestic violence, poverty, inequality + inter-generation well-being.
- Well-being buses: old condemned buses have been turned into a home for London's homeless - Occupants can sleep, dine and cook.
- Senior Citizens - Spanish city of Bilbao has put brain training games for elderly people in public parks - boost attention span, counter loneliness, memory, mental arithmetic.
- UK, Japan, French service called 'watch over my parents'. Relatives pay a fee to have postal staff look in on family members to fight loneliness and deliver groceries.

### Innovative Ideas-

- TRIFED agreement with Amazon to use Global Selling Programme to market tribal products globally.
- GoTribal Campaign: TRIFED is institutionalizing collaborations and partnerships with different organizations. The idea is to promote tribal products innovative activities to promote use of tribal handicrafts, handicrafts and natural products.
- Differently-abled people - Smart blind shoe - Internet of things enabled device; an interactive smart shoe can assist the visually impaired commute safely. IT has system that alerts the user with a buzzer and a vibration in the shoe upon sensing an obstruction in their path.
- IITD developed a smart cane that detects obstacles from knee to head height. It is a help for visually impaired. It works on ultrasonic transmitter receiver system, helps to change directions and find the alternative path.
- Social prescription - singing, dancing, drumming, volunteering and giving back to the community.
- Sesame street muppet show introduced a homeless character Lily to help children understand homelessness from the perspective of a child.

### Tech

#### Apps and Websites

- Babasaheb Bhimrao Ambedkar University (BBAU) will use an ISRO-made app named 'Total Key Solution' under the Swachh Bharat Mission to maintain cleanliness of the campus. Students will take pictures and upload. App will show route map of the dump to supervisor who can send a sanitary worker to pick it up - worker to clean and upload pictures.

- Complaints against child pornography and SH received on [www.cybercrime.gov.in](http://www.cybercrime.gov.in)
- Digital Detox App by SHUT Clinic - NIMHANS Bengaluru has developed a mobile app for people to reduce mobile usage.

### 3D printing-

- hearing aids
- corneas - Newcastle university scientists have successfully 3D printed the world's first human cornea in less than 10 mins. It is created by using a special bio-ink using stem cells mixed together with alginate and collagen.
- Human cartilage for use in arthritic joints.
- Model of a human heart complete with blood vessels but the size of rabbit's heart. It uses a bio-ink with human stem cells, hydrogel, polyester fibres to become tough enough for printing.
- MARSHA - 3D printed house for Mars. It is built using basalt and PLA (biopolymer). It does not use steel or concrete. It can be ground down after usage and re-printed using the same material. It is made in an egg-shaped to deal with the atmospheric pressure difference on Mars. It helps to deal with the wind and snow issues on Earth.
- Dubai made a 3D printed house-
  - ◆ Uses 50% less manpower
  - ◆ 60% less construction waste than normal
  - ◆ Cheaper and quicker
  - ◆ Rapid hardening concrete
  - ◆ Local materials
  - ◆ France, Haiti, El Salvador and Mexico have started trials for 3D printed shelters and affordable housing.
  - ◆ Mixture of industrial and construction waste, cement and a hardening agent; they are earthquake resistant and can be printed in 12 hours.

### AI-

- Positives-
  - ◆ Cleaning space debris - AI can do the volume of processing required for thousands of pieces, which do not decay the way it happens on Earth. Once tracked, with AI engine training bringing in more accuracy, a 'netting' probe with an extended arms to collect debris can be positioned in the path of debris to be collected and cleaned, thus eliminates potentially dangerous targets by leveraging AI based technology.

- ◆ Help fight climate change.
  - monitoring deforestation and agri emission
  - designing low-carbon materials that can replace steel and cement
  - using machine vision to monitor the environment
  - Predict extreme weather events
  - Make transportation more efficient
  - Reduce wasted energy from buildings
  - Geoengineer a more reflective Earth
  - Give individuals tools to reduce their carbon footprint.
  - Data analysis to find inefficiencies in emission-heavy industries
  - AI to model complex systems, like Earth's own climate
  - Forecasting electricity generation and demand - suppliers better integrate RE into national grids and reducing wastage
- ◆ AI program Pluribus beats professionals in 6-player poker. Earlier it was done in checkers, chess, Go and 2 player poker. AI algorithms can be used to solve a "wide variety of real world problems" that, like in poker, involve actors who bluff, or hide key information.
- ◆ Google's AI AlphaZero learnt hundreds of years of human chess knowledge in under 4 hours and then started inventing its own tactics. Now it is studying how proteins fold and could help cure Alzheimer's, Cystic fibrosis and Parkinson's.
- ◆ AI algorithms have been developed to detect precancerous cells with 91% accuracy as against only 69% by expert review.
- ◆ Boston runs school buses on an MIT algorithm. It has saved \$5 million in a year. It has led to 1 million fewer miles driven every year and more efficient journeys for 1000s of school-going children. It gets data from Google Maps to analyse traffic patterns and uses the data on which student needs to get where from information provided by schools regarding students. This has led to efficient trips with less miles and more kids in each bus, smoother planning by computer in 30 mins. what man did in weeks.
- ◆ AI robot of Google learnt to walk by itself by a reinforcement learning plan for the robot made by the researchers so that it could learn from its mistakes.
- ◆ New AI tool can decode security captchas within 0.05 seconds.
- ◆ AI algorithms have been developed that beat doctors at detecting early stage of cervical cancer.
- ◆ AI has been aiding the search of child trafficking victims. It processes through a database of hotel room pictures to match with online advertisements.

- ◆ Ai-Da-AI enabled humanoid sketch artist is able to draw creatively billed as one of the most exciting artists of our time.
- ◆ KP-Bot - India's first robo-cop launched by Kochi-based start-up, Asimov Robotics, Cyberdome (technology development centre of the Kerala police).
- ◆ In Chinese of Hangzhou city traffic is controlled by an AI brain that cut response time of emergency vehicles in half, eases congestion for drivers. The system uses data from cameras, Autonavi web mapping and navigation service.
- Negatives-
  - ◆ Nuclear wars - International Campaign to Abolish Nuclear Weapons has explained that hackers could breach A.I. technologies used in nuclear programs. They could use A.I. to dupe countries into launching attacks. For instance by using deepfakes, realistic-looking computer-altered videos to create a perceived threat that might not be there. A.I. could also be used to target nuclear arsenals or the people who manage them.
  - ◆ Robot read 3.5 million books and saw that we describe men and women differently in text. Adjectives like strong, rational, courageous and righteous are attached with men; Beauty is attached with women; Negative words for body are five times more frequent for women. Adjectives for women - focus on appearance and for men on behaviour. This has implication on AI, ML codes being developed using these texts.
  - ◆ Amazon used AI to help with recruiting showed bias against women as it used male dominated data to learn.
  - ◆ ProPublica was a risk-assessment software developed to forecast probability of reoffending by criminals showed a racial bias against black people.

## Privacy issues

- Google contractors regularly listen to and review some recordings of what people say to AI system Google Assistant, via their phone/smart speakers - Google Home. The company acknowledged that humans can access those recordings after some of its Dutch language audio snippets were leaked.
- US regulators approve \$5 billion Facebook settlement over privacy issues.

## Navigation

- Google Maps launches 'Stay Safer' feature - alert and notify users travelling in taxis and auto rickshaws when their vehicle goes off route.

## Computer Gaming-

- Gaming Addiction - Addiction to video game is bad for brain. WHO's next international classification of disease. Addictive gaming behaviour can

impair life, personal, social and family relationships, depression and anxiety, behavioural changes and sleep disturbances, irregular dietary habits, insomnia, sleep apnea and nightmares. But it can help in improving reasoning, memory, perception and problem solving.

## Robots

- Robots are being designed for HADR
  - ◆ European ROBOT project - autonomous robot on wheels
  - ◆ Boston Dynamics Wildcat - 32 kmph runner
  - ◆ Robot bushbaby - jumping robot with single leg - modeled after Senegal Bushbaby animal
- Chinese self driving car designed to be an office space as well - use 2 hours of commute to work.
- Feb 2019 - Kerala police inducted a robot for police work.
- Feb 2019 - Chennai got its second robot themed restaurant, robots serve as waiters and interact with customers in English and Tamil.
- Germany has developed ethical rules for autonomous vehicles that mandate human life be given much higher priority over property or animal life.
- December 2018 - cardiologist performed the world's first inhuman telerobotic coronary intervention on a patient nearly 32 km away.
- Indonesia has started using drones to deliver books, medicines to school children in remote areas to narrow inequality gaps between rural and urban areas.

## Internet

- Internet (1969) changed the world in 50 years. It was developed by a US military research agency.

## Space

- Cold war era spy satellite images repurposed to study ice loss in 650 glaciers.
- Odisha uses satellite imagery to create unique flood hazard atlas - uses flood inundation data from 2001 to 2018.

The atlas will help the authorities in several ways:

- To systematically plan flood control measures
- To control developmental activities on floodplains
- To carry out relief and rescue operations
- To plan relief shelters and health centres

## Innovative ideas

- Bill Gates has suggested the idea of robot tax to help losers of automation.
- Jack Ma has advised to teach kids what machines will never learn - Value, believing, independent thinking, teamwork, care for others, sport, music, arts, soft power.

- Blockchains can store a person's digital identity like passports, exam certificates and financial histories. This can help refugees get jobs when documents are destroyed and help with payments reducing bank intermediary fee for transactions by 98%.

## Terror, International Crime, Security

### Examples-

- Greyhounds of AP
- Tripura Model
- Mizoram Model

### International examples-

- Indonesia
  - ◆ de-radicalisation programs to tame terrorists in communities and families of reformed former terror convicts.
  - ◆ recruited young internet users with huge social media followings to spread the message of peace.
  - ◆ Philippine Military Recruiting Muslims into the military to counter terrorism on and religious and cultural approaches.
  - ◆ U.S. National Security Agency's programme of mass surveillance was examined by American court and found that of 50 instances of terrorist attacks prevented not even 1 successful pre-emption was based on the material collected from the NSA's surveillance regime.
  - ◆ Building a counter narrative to mis-leading radical interpretation of Islam - Singapore Internet Imam to counter the radical agenda online, answer queries and correct misunderstanding about jihad.

## Women

### Social Welfare

### Government-

- Delhi government deployed bus marshalls on 60% of the city's buses to deal exclusively with women safety issues.
- DC Budgam Syed Sehrish Asgar ensured all Budgam schools, college have sanitary napkin dispensers, incinerators - thus addressing drop outs of girls.
- 'SHE Team' led by lady sub-inspectors have been deployed by Odisha's Gajapati district police
  - ◆ Patrol schools, colleges, local institutions and public places, where young girls and women are subjected to eve-teasing, stalking and harassment hot spots.

- Prevent sexual harassment at workplace and public places.
- Teach self-defence and cyber space safety to young girls and children.
- Visit child care institutions and make children aware about sexual abuse.
- Changing narrative on shaming women who suffer sexual assault - Comic Shakti portrays a girl who got raped as a teenager, society and family blamed and banished her.. Hindu god Parvati came to her help.. helped her vanquish her assailters and now she rescues other victims including trafficked people - by Ram Devineni.
- "Web - Wonder Women" campaign by MWCD to celebrate the exceptional achievements of women, who have been driving social reforms via social media.
- Kudumbashree by Government of Kerala in 1998 to wipe out absolute poverty by concerned community action and leadership of LSG.

### NGOs-

- Women toilet masons of Assam - teams of women building toilets under SBM in Assam. They get employment and work gets done in a much more efficient and a timely manner.
- Foolmani Devi from Gutuatoli village, Ranchi, Jharkhand has benefited 400 people. She heads a team of 4 masons which has built 125 toilets under Swachh Bharat Mission trained under government initiative and has empowered women masons.
- #MeToo - Tanushree Datta, Sruthi Hariharan, Chinmayi Sripada vs. Alok Nath, Nana Patekar, Arjun Sarja.
- Indian Young Lawyers Association litigated the Sabarimala Case and ended gender discrimination in worship in that temple.
- Western Odisha Migration Network, Aide et Action, Global Alliance Against Traffic in Women, Aaina is working on developing a database of women migrant workers in the form of a register to track migrants.
- UNICEF 'super dads' campaign to emphasize father's active role in kids' life.
- Father's day is celebrated in 80 countries.
- Women's wall at DU has been made against patriarchy at the national capital and in solidarity with women who did the same in Kerala.
- Tarabai Shinde, Maharashtrian housewife - Stree Purush Tulana (Comparison of Men and Women) - protest against double standards of a male dominated society.
  - Young Brahmin widow sentenced to death for killing her newborn illegitimate baby
  - no effort to identify or punish father
- Begum Rokeya Sakhawat Hossain - Sultana's Dream

- ♦ was a short story and the earliest example of science fiction writing in India
- ♦ first by a woman author anywhere in the world.
- ♦ It reversed gender roles
- Sainik school in Mizoram admitted women on pilot basis

	Kerala	Tamil Nadu	UP	Bihar
Female literacy	92%	74%	42.2%	33.1%
Avg. age at marriage	21.4 (India-20.7)	21.2 (India-20.7)	19.4	19.5
TFR	1.7 (India-2.3)	1.6 (India-2.3)	3.1	3.3
% of women @ full antenatal care	61.2	45	5.9	3.3
NMR	6	15	>25	>25
Poverty alleviation	15 to 7.1	22.5 to 11.3	32.8 to 29.4%	41.4 to 33.7%

- Safety
  - ♦ UP Government recruited 1 lakh female special police officers as Power Angels to work for women's safety.
  - ♦ Hyderabad Police has set up Bharosa support Center for Women & Children. It is an integrated assistance where police, medical, legal, and prosecution, psycho therapeutic, counselling and rescue and rehabilitation services all are given under one roof.
  - ♦ Delhi Police's Operation Nirbheek to improve safety and security of girls in schools.
  - ♦ All women patrol van under Shishtachar Programme of Delhi Police.
  - ♦ Himmat app of Delhi Police.
  - ♦ Hawkeye app of Hyderabad Police.
  - ♦ Bangalore Police's Suraksha initiative.
  - ♦ Kangazha village in Kottayam, Kerala is the first local body to train all women aged 10-60 in self-defence under the Nirbhaya scheme in April 2017.

## International

- Sorehara-
  - ♦ Japanese website for anonymous complaints about harassment and other grievances.
  - ♦ Abbreviation of the Japanese for "That's harassment" was devised by a 21-year old college student.

- Japan is giving empty homes to single mothers. Japan has a property surplus and 700000 single mothers with no place to live. NGO Little Ones buys, renovates and rents cheaply to single mothers using government subsidy.
- Scotland - first place to make feminine hygiene products free for all women.
- Gender neutrality-
  - Mexico - boys can wear skirts to school and girls can wear trousers and there are gender neutral toilets;
  - UK - pupils choose which uniform they wear
  - Wales - offer the same uniform to both sexes
- Finland considering paternity leave to 7 months; Japan gives 30 weeks.
- In Sweden schools do not use phrases little boy and little girl but little people. They have no presumption on behavior and toys. They avoid words that divide people by gender. Rather they emphasise the use of words like humans, kids, people, friends. Kids make fewer gender assumptions thus widen opportunities available and helps avoid stereotypes.
- Just 2% of advertising portrays women as intelligent, 3% shows them as leaders. This seeps into our consciousness. Gender stereotyping can be harmful to both men and women. It affects how we understand the relationship between sexes. Womens are portrayed in advertisement for cleansing products and men for cars, credit cards, housing, banks, etc. UN Women has been working with brands to end stereotypes. UK, in 2018, started cracking down on advertisement that use gender cliches. Eg. Outlawed advertisement that market different toys for girls and boys.
- Women paid more than men per hour on an average in Bangladesh.
- Project Ikumen project in Japan incentivize dads to devote time with kids. Stay at home dads and not suited salary man was promoted as a role model.
- In Finland the level education is higher in women than men; women are more than 50% of the graduates.
- In South Korea mothers and fathers take parental leave at the same time. It is extending paid leave for fathers with flexible work hours.
- Lithuania installed traffic lights featuring female symbols on the 100th anniversary of women getting the right to vote.
- UNiTE Campaign has been working for a world free from violence for all women and girls.
- Ireland criminalised emotional abuse. It has created a new offence called 'coercive control'. Non-violent emotional abuse in the form of fear and distress; France, England, Wales and Scotland also have adopted such laws. Worldwide 35% of women undergo physical violence and suffer from depression, HIV etc.

## Economic

### Govt.

- NITI Ayog has set up Women Entrepreneurial Platform
  - ◆ Women Entrepreneurial Platform Investment Council addresses funding related challenges faced by entrepreneur.
  - ◆ Women Transforming India Awards
- Womaniya on Government e Marketplace.
- Government's Trade Related Entrepreneurship Assistance and Development (TREAD).
- Firms in India are sanctioning menstruation leave (2 days/month).

### NGOs

- Microsoft to Promote STEM education in AI studies and data sciences for women at NITI Ayog identified institutes.
- A start-up has designed a necklace that can be used to send SOS message to a friend when a person carrying it needs help.
- Project Sage - a private equity venture capital private debt funds helps women led enterprises mobilise funds.
- SAHA Fund - India's first woman's venture capital fund. It is for, by and of women entrepreneurs. Funds women led enterprises working in the domain of e-commerce, social media, education, healthcare, food technology.
- SonderConnect works on discovering, empowering and promoting Female Founders globally.
- Govt. - Kerala Tourism Development Corporation (KTDC) - India's first public sector hotel run entirely by women - 'Hostess'.
- National Forum for Single Women's Rights (NFSWR) – representing single women demands for enhanced budgetary allocation. Monthly pension and benefits for caregivers were also demanded.
- World Bank, SIDBI, UN Women and 10 wealth management firms and leading corporates have come up with a new social impact bond to offer credit to rural women entrepreneurs - Women livelihood bonds.
- Disha Project – UNDP India, IKEA Foundation and India Development Foundation has come up with - "Idea of Biz Sakhis"
  - ◆ To guide budding female entrepreneurs from rural communities multiple processes women.
  - ◆ Practical and psychological support.
  - ◆ Encourage rural women to undertake businesses by making them aware of entrepreneurship
  - ◆ Inform them about the benefits of own small businesses.

- Instrumental in the access to formal banking channels for loans.
- Information about schemes like Mudra Yojana Scheme.
- Give them inputs about access market linkages.
- Gives them inputs about variety of business models ideas to help them scale up.
- Helps small business owners develop their communication skills.
- Trains them to negotiate with stakeholders in ecosystem of businesses.
- Provides them with emotional and psychological support.
- Women in Cinema Collective - body formed by women to raise their collective issues.

## International

- Alibaba has 47% women employees. Jack Ma - if you want to win in 21st century empower others make sure they are better than you are. Women think more about others than self.
- In Iceland it is illegal to pay men more than women for same work. It is the first country to make such a law globally. The companies will be fined otherwise. Companies have to prove innocence. It is a world leader at gender equality with a gap of only 12%. Both parents get equal parental leave.
- In Sweden parent's leave of 480 days can be split between mother and father. Dads to take at least 3 months off; Parents with kids less than 8 years have shorter working hours as a right; They can take time off work when child is sick for 80% of the wages, preschools are subsidised by the government; The government provides regressive subsidy;. The country has one of the best childcare systems in the world.
- **Norway**
  - first country in the world to impose a gender quota on companies - 40% seats in boardrooms
  - strong parental leave laws entitling upto 14 weeks of leave to both parents
  - Start and Improve Your Business Program (SIYB) of the International Labour Organisation

## Political

### Examples

- BJD in Odisha and TMC in WB fielded 33% and 50% women candidates in Lok Sabha elections of 2019.
- Odisha House passed 33% reservation for women.

## International-

- UAE to double women's representation in Federal National Council to 50% from 22.5% from coming Parliamentary term.

- Ethiopia, Rwanda are one of the world's few "gender-balanced" Cabinets with 50% women.
- Rwanda-
  - ◆ women make up 61% of Parliamentarians
  - ◆ has seen a decrease in gender discrimination and gender-based crimes
- Finland-
  - ◆ First country in the world to award full political rights to women in 1906. The first country to have female MPs
- LEADERSHIP
  - ◆ Ritu Karidhal and Muthayya Vanitha - heading 2nd moon exploration programme of ISRO

**R**ewind the clock twenty years back, and one will find that the sci-fi film, 'Matrix', has caused quite a stir. The film takes us into a future where humanity has been enslaved by Artificial Intelligence. It revolves around humanity's struggle to retain its so-called place as the most superior species on the planet seemingly a childish fantasy at that time, fast forward to today, and all this appears a distinct reality.

Artificial Intelligence, or simply put AI refers to the capacity of a computer system to think and take decisions just like a human being. A development that started in the 1970s itself, has only now picked up pace. So rapid has been its rise that AI has become the talk of the tech-world. Every tech-giant is working on it and many nations are developing roadmaps on it. The who's who of tech-world is excited about AI, citing it as AN END TO HUMAN MISERIES. Their excitement and optimism is indeed justified for AI has applications in almost every field.

Perhaps the largest potential of AI lies in the economic field. AI is seen as the accelerator for building a global knowledge based economy. It has massive ability to boost the productivity and profits of companies. AI can help take more informed management decisions, improve manufacturing processes, perform redundant and high risk tasks, enhance customer interface. Its ability to streamline big data can help companies understand customer patterns and competitive behaviour more efficiently. In fact companies like Facebook and Amazon are already using AI to collect data sets on customers and introduce personal services.

AI can also provide a fillip to the banking sector in an almost identical manner. This can aid banks to take informed lending decisions, provide customized banking solutions, keep data secure. This can thus aid in financial inclusion.

The next important field being graced by AI is the domain of security. Self-driven cars are being developed by giants like Google and Tesla, with an aim to reduce road accidents. For the armed forces, unmanned aerial vehicles (UAVs), drones, self-driven aircrafts and tanks are being developed. The idea is to reduce the role of humans on the

battle-ground build a military deterrent. Apart from this, AI can also be used for policing and intelligence gathering.

Moving ahead, even Governments are thinking about the deployment of AI in political fields. It not only aids in policy making, but also provide public services, especially in rural and remote areas. It can act as banking correspondents, be used at Common Service Centres (CSCs), in infrastructure projects and for streamlining rigid bureaucratic procedures.

AI can even contribute in the field of healthcare. It has already been used to assist doctors in complex operations, perform surgeries by itself and for hospital management.

Even environmentalists are hoping that AI be used for advanced computing of meteorological data and study land from changes.

Last but not the least, AI can also serve as a companion to lonely individuals. Research is going on to develop AI-powered human bots, that can interact with humans as realistically as another human. The humanoid Sophia is just an example of the case in point.

Combining all this, it indeed looks true that AI can be the answer to all the miseries of human kind. But not all that glitters is gold. It is a natural law that excess of anything and everything, is bound to be dangerous. Even AI, for all its technological prowess, cannot escape this law.

The biggest fear comes from the unregulated and unethical use of AI. First of all, AI is an expensive technology to develop and thus risks the fear of becoming the monopoly of a handful of countries. Such a monopoly can never be fruitful.

One only needs to imagine the potential misuse of AI in the field of security. It is a technology that can wreak havoc in all the five theatres of war – land, air, water, space and cyber world.

Many organisations have pointed out to the development of AI powered Lethal Autonomous Weapon Systems (LAWS). These have the potential to kill thousands of people in one go. If such a technology falls into the wrong hands, the destruction of humanity is guaranteed.

There are further legitimate fears of uncompassionate policing, and above all, breach of privacy. AI can easily be used to infiltrate the digital footprints of an individual, thus compromising on this fundamental right.

AI is not an incorruptible technology and can become a victim of cybercrimes like hacking. This further aggravates all the above issues.

The threat is not restricted to the field of security. AI will impact the economic sector equally. It will increase the divide between rich and the poor. It can cause huge unemployment, as companies will look to cut down on costs not only in the manufacturing

sector, but also tertiary. It also opens up space for unethical business practices, like obtaining customer data without consent. It will also put MSMEs at further risk of competing with MNCs. This will have huge repercussions in developing economies like India.

Moving on AI, can even put international and domestic governance at risk. It can provide a leverage for bigger countries over the developing and under-developed nations. This threatens the vision of a multi-polar world.

AI can be used to undermine electoral processes or threaten stability of regimes. For instance, AI can be used to infiltrate EVMs. All this will have huge geo-political implication.

It hence looks like it is better to let go-off such a technology, before we create a Frankenstein capable of ENDING HUMANITY ITSELF.

However, it is possible to create a balanced path that helps utilize AI for the betterment of mankind and reduce potential risks. It is imperative that the international community comes together on a single platform. The aim must be to distribute the fruits to all equitably. A rules based order needs to be established. Non-proliferation of AI into the wrong hands must be the priority. Further, organisations like the UN must work out to prevent any nation from developing lethal weapons and thus prevent what happened in the nuclear arm race.

For countries like India, who are developing their road maps for AI, the task should be to understand all dimensions holistically, including the ethical dimension. Further, India must be the leading voice of third world countries at international forum.

To conclude, only a rules-based order that is built on the principles of equality, security and morality, can ensure that AI be a boon for humanity.

The famous director, Steven Spielberg once said:

*“Technology can be The Best Friend of Man,  
But also His Worst Enemy”*

Thus it is upto us to ensure that this relation be one of eternal friendship and peace, and let the wars be restricted to fantasy films and books only.



## Beware the Barrenness of Busy Life

Akshat Jain, IAS (AIR 2 CSE 2018)

**A**s Ramesh opens the door and enters into his house, he is greeted by a silence, a silence only broken by the sound of the fan. Tired from his job, he calls out for his wife, only to remember that she was on a business trip. His elder son is busy on his laptop, unaware of Ramesh's presence. His younger daughter approaches, and asks him, "Daddy, Will you take me out for dinner today? You promised." "Sorry darling, but daddy has got a presentation to prepare for," Ramesh replies.

These kind of instances have become a common story in our households. Adults are occupied in their nine-to-five jobs, except that they hardly end on five. Children remain engrossed in their studies, and if not, then in their mobiles. The elderly remain lost, with boredom set to grip their final years of life. Has this become our fate-to be gone with the BARRENNESS OF OUR BUSY LIVES? How has it come down to this?

The reasons, for once, are not difficult to find. In today's era, the working population is involved in a rat race. At a time when jobs are hard to come by, and the costs of living keep on increasing every day, it is not surprising that these people lead busy lives. Globalization did bring in big and lucrative jobs at MNCs but they also brought in the obligations to work overtime, from home, at weekends. Whatever time is available, is spent on household obligations.

The children of today are not the same as before. Our educational system is such that the balance between studies and sports seems to have lost. With emphasis on getting marks and entering the best colleges, our childhood revolves around our school, tuition classes, and the coaching centres. Every child lives under the pressure that if he/she doesn't land a high paying job, they might not survive in this world. Due to all this, the once-put emphasis on physical activity, creativity, arts and innovation has evaporated. The neglect of parents further complicates the issue.

The present situation also owes much to technology. The purpose of technology was to free humans from the redundant tasks, and enhance the quality of their lives. Ironically, technology has only worsened the cause. Everybody seems to have their eyes stuck in their mobiles, even when someone is talking to them. The laptops ensure the work reaches out to every home, and is not confined to the office. The playground of the child has

shrunk from the nearly park, to the play station. In fact, technology has only made us more lazy and resistant to spending time with others, physical activity, and to appreciate the natural beauty of this earth.

Probably, at the heart of all this has been a shift in our priorities and values. Materialistic possessions and a desire for wealth have eroded the real joys of life. Though it is not bad to pursue them, it certainly is unethical to make them the sole objective of our lives. This has been singled out by the Vedas as well.

However, one may still point out that life is still going on as before. They may say that all this is an exaggeration, and we still do spend time with friends and family. Well, the impacts of our busy lives point otherwise.

On an individual level, we find ourselves emotionally unbalanced. Our bank balances might have increased, but the happiness is not there. Children feel neglected by their parents; adults feel isolated from their loved ones and colleagues; while the elderly die in loneliness. The rising rates of suicides, juvenile crimes and old age homes are a testament to all this.

The institution of family, the cornerstone of human society, has also been affected. The rising incidences of divorces, single parent households, parent-children divide and fights between older and younger generation, all have destabilised our families.

The society has not been spared either. With declining levels of interactions, people have become intolerant and suspicious of even their neighbours.

All this has impacted our health as well. With low levels of physical fitness, and high level of mental fatigue, we have been pushed towards vices like alcohol and cigarettes. It is thus no coincidence that lifestyle diseases like cardiac arrest, lung cancer, diabetes and obesity are at an all-time high.

Finally, our democracy has also suffered. People are too busy to vote, care about national happenings and participate in nation building. After all, nation building is also about holding elected representatives accountable and developing a vibrant citizenry.

Amidst this abyss, are we set to become the slaves of our monotonous lives? Can this situation be reversed! Undoubtedly, yes!

We must start with reforming our educational system. So that each child gets the childhood he/she deserves. The curriculum must give proportional focus on studies, learning, physical activity and arts. Teachers and institutes must lead from the front, and actively encourage parents to spend time with their children.

Moving on, the work culture in our companies need to change. A company that gives adequate personal time to its employees, organises team trips and parties and doesn't intrude into their personal time always benefits from a happier and productive workforce.

The government must lead from the front here. A look at the labour laws may also help foster such an environment.

However, the ultimate one lies on the individual itself. Each of us should concern for our spiritual happiness, at least equally with that of materialistic pleasure. Spending valuable time with our dear ones, practising yoga and meditation, and building upon our relations with the society are some steps that we can take. These will only improve our productivity-economic, social and moral.

To conclude, it is high time that we realize where our true happiness lies. The human nature thrives when it connects to its own inner self and to other fellow beings. Therefore, the next time Mr. Ramesh says no to his daughter, we must all remind him

*Beware The Barrenness of Busy Life!*



## Industry 4.0 is the Biggest Game Changer of Present and Future

*Jayant Nahata, IAS (AIR 56 CSE 2020)*

Yuvval Noah Harari in his book "Sapiens" has described the brief history of humankind from the Cognitive revolution to agriculture revolution to scientific revolution. The phases of the last two-three centuries of scientific revolution have seen astonishing progress. From the spinning jenny and power loom to telephone line, internet, micro-chips and supercomputing, the strings of achievements have been dizzyingly fast.

Now, (wo)man stands at the cusp of another great revolution i.e. the Industrial Revolution 4.0 which will "blur the lives" between the physical, biological and technological as we move into the future. It builds on Industrial Revolutions of the past based on "steam power", "electricity" and "electronics"/"Information Technology" yet very different and broader in scope.

Let's analyze, how Industrial Revolution 4.0 is set to be the biggest game changer of not present but future too. Whether it faces any challenges or poses any threats? Further, how can humankind reap the best dividends out of this great revolution that is unfolding.

Industrial Revolution 4.0 promises a future that is utopian to the least and impossible to grasp fully. It will involve technologies such as intelligent AI powered machines capable of human level cognition. We can imagine human cyborgs with chips inserted in the brain to augment our capabilities or 4-D printing in new age factories of the future. From biotechnology to nanotechnology, from smart manufacturing to quantum computing, Industrial Revolution 4.0 is set to dazzle humankind.

No other revolution comes close. Any change of economic model such as *laissez faire* to welfare state and current neo-liberal, neither any changes in political agenda can hope to compete with the magnitude/scope of changes that Industry 4.0 promises.

In the economic sphere, we can expect to see ultra-high efficiency logistics due to predictive AI based technologies. Amazon has already rolled out the feature in some American towns where a product is pre-shipped to a location based on high probability that the customer will order it soon!

The industries will shift from current "assembly-line" manufacturing to decentralized, innovation driven 4D printed or 3D printed products. This will create complex, customer

suited products like prosthetic limbs at fraction of environmental costs. It will boost productivity in the economy and reward talent.

Drone based technologies and nano-sensors have already found their way to Netherland's farms. The real time data down to a 'single potato' about soil health, water requirements, optimum temperature is already revolutionizing concept of food security methods. Netherland shows the world a glimpse of farming of the future!

Outside industries and farms, the most important social domains of education, health and skills can be expected to see dramatic changes. Already China has deployed, AI powered robots as nursery classroom teacher assistants.

In India, NITI Aayog in a bold pilot, has partnered with Qure.ai company to deploy AI tools for TB screening in aspirational districts. Numerous studies have shown potential of AI based machines to diagnose TB, cancer etc. at a higher accuracy enabling faster diagnosis and speed to treatment.

The world of skills will see a change too. Not just the requirements of data scientists, biotechnologists etc. is set to proliferate, the task of skilling is set to see paradigm change from institution led to personalised, own-paced programs such as Massive Open Online Courses (MOOCs).

Industry 4.0 will not just change our exterior but ourselves too. With the ever closer integration of biotechnology in our lives apart from digicenticals (such as glucose monitoring chips embedded in body) and nano robots to deliver drugs, humans may soon become part of the revolution, quite literally. Technologies such as google glasses, virtual reality headgears, neuralink launched by Elon Musk (project in progress) show how technology might pair up with humans to script history of 21st century.

The political aspects of our lives can be enriched too. Instant, robust communication can boost participation of people in democratic policy making which is today restricted due to hassles of engaging directly with our political representatives. Not just the country, the world can come together overcoming the barriers of boundaries and check posts.

The borders may now irrelevant but with technologies like space based observation and surveillance drones, laser guided walls, robots manning the risky fences, security will undergo radical transformation leading to better safety and peace for the people.

However, 4th Industrial revolution brings with it host of unpredictability and policy/moral/economical/environmental challenges.

Firstly, the pace of technological progress is unprecedented and even beats theories/any past assumptions of gradualism. The future is here and now. We need to cope with it in real time.

Fourth Industrial Revolution and the flood of new technologies it entails, can further the inequalities already existing in our society. The Piketty papers highlighted that 1%

of Indians own 70% of all wealth in India. This gulf between the rich and the poor will/may get wider as the know-how, digital and financial literacy is enjoyed only by the few and only few can afford such technologies, inequalities even between nations maybe created, the Global North and Global South may further drift away in prosperity. We can already see China through "Made in China 2025" trying to get a lead in technologies like AI, robotics, SG, semi-conductors. This has precipitated the undergoing trade war that threatens peace across the world and lowers global growth prospects.

Further, a cocktail of futuristic technologies may go out of human control creating the "Frankenstein Monster" as shown in movies like Terminator and can threaten mankind itself. This raises serious moral issues. The recent episode of the Jiankui (China based researcher) who modified germline of living embryos in the quest of AIDS prevention shows the "regulatory headaches" the world is going to face going forward.

The environmental impact of 4th Industrial Revolution is really "the elephant in the room" as our previous experiments with steam engines and mass production in factories have today pushed mankind to the brink of civilizational collapse. IPCC predicts havoc with rising sea levels submerging islands and coasts, threatening our energy, food and health security.

As Charles Dickens eloquently put it in his novel "The Tale of Two Cities"- "It was the best of times, it was the worst of times". "It was an age of wisdom and age of foolishness". Similarly, the predicament facing humankind is based on how we choose to use these technologies and shape them. It can either be misused for geo-politics and breed inequalities or be used for astonishing results such as "knowledge economy", efficient production and augmenting human capacities to the fullest of its potential.

Since the scope of Industrial Revolution is global, the efforts to shape its future has to be global too. Governance models need to change for regulating technology use such as prohibition of human cloning/germline editing or offensive use of Artificial Intelligence.

For truly reaping the benefits of Industry 4.0, Amartya Sen's capability approach need to be used as the yardstick. Investments in upskilling and reskilling youth will truly reap demographic dividend else it might well turn into a demographic disaster – social unrest and protests. Tools of AI, robotics, tele-medicine can itself be used to prepare workforce for an era of Industry 4.0.

Investments on social security need to be made. The concepts of Minimum Basic Income need to be piloted as early as possible as automation is already risking jobs and threatening unrest. Education system needs to shift to "Continuous Learning Paradigm" such as recently started in Finland and National University of Singapore.

Micro, Small and Medium scale enterprises need to be integrated in formal sector, given technological capabilities and infrastructure/financial support to leverage the

benefits of the Industry 4.0 which will essentially favour MSME-led decentralized product manufacturing.

Finally, as human revolutionary progress indicates, man has always longed for greater happiness and boundless productivity. With careful planning and capabilities, Industrial Revolution 4.0 will truly emerge as the biggest game changer for present and future.

*"The future is now"*

